

ART. III. *Observations on the Cholera of Paris.* By C. W. PENNOCK, M. D. and W. W. GERHARD, M. D. of Philadelphia.

THE epidemic which has existed for the last month at Paris, and has not ceased at the moment at which we write, found us pursuing our ordinary medical studies; these were interrupted, the clinical lectures were suspended and all access to the hospitals was for the moment forbidden. The restrictions were, however, soon removed from the medical visits, the attendance became regular and more frequent than in ordinary seasons, but the attention of the physicians was exclusively directed to the study of this novel and dreadful affection. The attention of the ablest pathologists of Europe being thus concentrated upon the study of the epidemic, it was hoped that its anatomical lesions would be observed with care, the succession of its symptoms ascertained, and perhaps that from these data some laws might be deduced of high importance in the treatment of the disease. The cholera had been the subject of special medical commissions in all the European governments, which missions were not without their use, although their object was imperfectly attained, and it is to be regretted that their example was not followed by the authorities of the United States. The American physicians who remained at Paris during the epidemic did not aspire to the honour of representing their profession—belonging to the youngest classes of it, they could pretend to nothing more than their own instruction, and would only be useful as the interpreters of the Parisian pathologists. With these views the authors have ventured to publish a condensed account of the epidemic at Paris, based upon such cases as they had observed in the practice of the most accurate physicians. They believe that the important facts may be contained within the dimensions of an essay, and that this form will be more extensively useful than if they had added another to the multitude of volumes already devoted to the Asiatic Cholera; besides, as we may hope for detailed opinions from the physicians in whose service these facts were collected, all prior publications should be regarded as imperfect introductions to more important documents.

Several hospitals, as the Hôtel-Dieu and the Val-de-Grace, were occasionally visited, but the complete observations were collected at La Pitié, in the wards and amphitheatres of MM. ANDRAL and LOUIS. The reputation of M. Andral as an eloquent professor and learned pathologist is scarcely less known in America than at Paris, but his accurate discrimination and skilful practice can only be fully

appreciated by those who have had the happiness of listening to his personal instructions. The wards of M. Louis have furnished us with the greatest number of facts. The cases were examined with a minute attention and the autopsies made with a care unknown not only in other cities, but at Paris not witnessed except in the wards of the *few* accurate observers. The inquiries of this eminent pathologist in cholera as in other diseases were not directed with the intention of supporting a favourite system, but from the desire to arrive at correct medical data, and to diffuse a taste for accurate observation amongst the numerous pupils who have been educated under his auspices. The Americans who have lately pursued the study of medicine at Paris, are equally indebted to him for his important lessons, and the kind attentions which they have received as individuals; obligations which the authors of this essay are especially happy to acknowledge. The plan pursued will be extremely simple, a number of detailed cases terminating by death, will be presented with their anatomical lesions; and analyses will be given both of these cases and such others as were necessarily excluded by the limits prescribed. A picture of the severe characteristic disease is thus more accurately presented than by general descriptions, and the relative importance of the symptoms may be readily understood. Other observations will furnish examples of the lighter forms in which medical science proved sufficient to overcome the malady; unfortunately the violent symptoms which the disease frequently assumed were rarely subdued by any system of treatment. The summary devoted to the general history of the disease need not be long, the only points of interest being such as were peculiar to the epidemic in this city; these will be noticed as fully as the facts yet communicated to the public will warrant. The important question of the treatment is yet undecided, and should only be discussed with caution. What opinions the majority of the Parisian physicians have adopted cannot be ascertained, and in the present limited knowledge, suggestions should rather be thrown out than positive opinions advanced.

The epidemic commenced on the 26th of March, in the quarter of the "cité," a damp island in the Seine inhabited by the most wretched classes of the population, and in a few days it extended on each side of the river, through the dirty and narrow streets in that part of Paris. It speedily prevailed with great violence on both sides of the river, but on the northern side it was chiefly fatal in the 8th and 9th arrondissements, including the faubourg St. Antoine; on the southern side all the three arrondissements into which this part of Paris is divided, suffered severely, especially the 10th, in the vicinity of the Ecole

Militaire, and the Invalides, and the 12th, which was a much poorer and worse ventilated district. The populous portion of Paris comprising the 1st, 2d, 3d, 4th, and 5th, arrondissements nearly escaped, so that the apparent mortality was really in a much greater ratio for the five or six districts, which the disease attacked with most violence, than it seems to have been for the whole city.

It was at first imagined that cholera was a disease of the poorer classes, an error which probably arose from its appearance in the damp, unhealthy districts which are tenanted by the most necessitous part of the population; the fancied exemption of the wealthy soon ceased when the victims became numerous in the aristocratic suburb of St. Germaine; the residence of most of the ambassadors and nobility. The portions of the city which suffered least, perhaps owed their exemption to a more elevated and better ventilated position; but general conclusions of this kind would be opposed by so many exceptions that we do not venture to make them with confidence in their correctness. The aged or those past the prime of life, were much more subject to cholera than the young, and less capable of resisting its violence; we had prepared some tables of the ages most affected by cholera, but we abstain from all statistics, as the documents are at present necessarily incomplete. MM. Villerme and Parent du Chatelet are at this moment collecting the materials of an accurate work upon the statistics of cholera, which we shall probably communicate in a subsequent number of this journal.

It is proper to remark, that this essay must be necessarily incomplete from the difficulty of compressing abundant materials into a small compass, and the peculiar circumstances under which the authors were placed. Believing that the basis of it is valuable, because it is the results of the experience of the first pathologists of the age, the authors only regret their inability to act as more faithful interpreters.

CASE I. Salle St. Paul, No. 22. Service of M. Louis. Lussat Joseph, ætat. sixty, groom, Rue de Seine, No. 5, 12th Arrond. entered April 24th, 7½ A. M. Well nourished during the winter, and slept in a dry room in his stable; he commits no excesses, and generally has an excellent appetite and digestion, but in his ordinary health he states that he has two or three liquid stools each day? Last night he slept well, rose as usual at 3 A. M. to feed his horses, and was in perfect health then, as during the whole of yesterday, when he ate and worked as usual. At 5 A. M. thirteen hours since, he was seized with a violent diarrhœa, at least ten discharges before his entrance; the diarrhœa was not attended or preceded by colics or

other pain in the abdomen, nor by chill and perspiration. Cramps occurred soon after the attack, beginning in the legs, and since continuing without interruption, but not severe enough to force cries from the patient. He vomited for the first time while in the litter on his way to the hospital, and also since his entrance, the matter vomited was without bitterness or other taste. Has passed no urine. Voice became feeble from the beginning. No dyspnoea.

Actual condition.—April 24th, 8½ A. M. Face livid, moderately violet, cool, especially the nose, eyes hollow. Temperature of arm and forehead nearly natural, lower part of legs cool, the upper part of the chest is also more or less livid, and cooler than natural, but the rest of the body is of the usual temperature. The veins of the upper extremities were also distended, even those of the hands were a little elevated. Sight and hearing perfect, intelligence unimpaired. Skin of ordinary sensibility, the folds made in the neck by pinching it up, very slowly effaced. Respiration 34, a little high. Pulse 88, very small and feeble, but regular. No cephalalgia, no pain or malaise when the cramps cease, nor any difficulty in the respiration. Somnolence, but checked by the cramps. Cramps are very violent, and exist both in the upper and lower extremities, especially the latter; the pain produces contortions of the face. Tongue cool, very livid. Thirst moderate. Abdomen indolent in its whole extent, even on pressure; the usual resonance on percussion above the umbilicus, but dullness of sound at and below it. The matter vomited since his arrival is formed by a watery liquid, (like dish water,) and containing flocculi of mucus, which do not resemble boiled rice. In general the patient seems feeble, but not to an extreme degree.

Ordered lemonade. Injection of linseed with ʒij. laud. Sydenham, to be divided in four parts, and one given every two hours. Frictions every half hour.

11½ A. M. The blue colour is now very marked at the chin, pulse scarcely sensible. Somnolence interrupted frequently by the painful cramps of the lower extremities. Two injections were administered, no vomiting nor dejection has occurred. Oppression at the epigastrium; indifference to the kind of drinks offered to him. Sinapisms to thighs. Frictions frequently.

4 P. M. Deep leaden blue colour on the whole body, incomplete loss of senses and intelligence, the patient appears to understand questions, but cannot reply, or return signs. Forearms cool, and covered with sweat. Radial pulse still perceptible, but very feeble, and frequent; the carotids pulsate feebly. Cheeks and nose cool, rest of face of natural temperature. Eyes more hollow than this morning, axis of



both directed outwards, pupils a little less than a line in diameter, the eyes are encircled, (cernés,) and bright, but without expression, and motionless. Respiration 32, high and noisy. Abdomen slightly tympanitic.

The injections and frictions were administered as directed. Death at 5 P. M.

*Autopsy, April 25th, 9½ A. M.*—Skeleton rather large and well-formed. Body rather thin. Face blue nearly, as in the last moments of life; livid blue unequally marked in the lower extremities. Body cold, except in the abdomen. Great cadaveric rigidity. Muscles large, of good colour, and not fishy, (poisseux.) Head.—Cranium was nearly twice the ordinary thickness. No blood external to dura mater. Very considerable infiltration under the arachnoid of a thin and livid red liquid. Brain small and very moist. The cortical substance grayish, and of deeper colour than ordinary. Medullary matter moderately injected. The whole mass of good consistence, but flabby. Each of the lateral ventricles contained about six drachms of serosity, less red than that of the arachnoid. Corpora striata were of the natural tint, but a little deeper than usual. The annular protuberance was remarkable only for its flaccidity, which was even greater than that of the cerebrum. The cortical substance of the cerebellum was livid red, and at its base there was about an ounce and a half of serosity. The spinal marrow was perfectly natural, both in colour and consistence, the nerves passing from it were equally free from appreciable lesion. The semilunar ganglion was grayish and reddish, and very firm so that it was impossible to divide it with the fingers, a line in thickness. Superior cervical ganglion was small, an inch long, and a line and a half broad, and of pale gray colour, it was separated by an interval of two lines from the middle ganglion which is also normal. The cervical plexus was perfectly natural, the par vagum offered at its exterior only some longitudinal red lines between its filaments. Thorax.—*Pericardium* healthy and without liquid, a little viscous on the exterior face of the left ventricle. The heart was of moderate size and contained much liquid blood, but not the least coagulum. The walls of the left ventricles were six to eight lines in thickness, and more so in the parts corresponding to the columnæ carneæ; its cavity, like that of the right, was a little larger than in the natural state. The *epiglottis* was moderately injected on both its faces, it was less pliable than usual; some injection was observed within the *trachea*, but only to a marked degree upon the projecting cartilages. Membrane healthy in other respects. The *left lung* was universally adherent, its upper lobe was light, and of a

bright red colour internally, excepting some blackish spots where the tissue is not evidently more dense than in other parts. The inferior lobe was heavier, and blackish near the fossa dividing it from the upper lobe, but without granular structure, a quantity of blood mixed with small bubbles of air flowed from it on pressure. The *right lung* was not adherent, its upper and middle lobes were less red than the left, with some dark spots on its posterior part. The inferior lobe was heavier than that of the left; posteriorly for the thickness of ten to fifteen lines, its colour was deep red, without granulation; this colour was circumscribed and contrasted strongly with the surrounding red. The black portion is firm, the fingers penetrate it the more readily in proportion to its firmness, but a moderate and continuous pressure forces out the blood from it with ease, and leaves the pulmonary tissue of the ordinary cohesion. *Abdomen.*—The *œsophagus* offered many crypts, especially in its upper third, the mucous membrane was every where covered by its epithelium. The *stomach* was rather large, containing at least a quart of troubled, reddish-gray liquid, thin, and intermixed with mucous flocculi of the same colour. The mucous membrane in general was gray, with a slight shade of livid pink; some spots of vermilion-red were observed near the cardia, and were formed by a multitude of little red points, more or less confluent. The membrane was of a smooth, velvet-like appearance in the breadth of four or five inches along the small curvature; in other parts it was mammillated, especially along the large curvature, and great tuberosity. No depression of surface, or longitudinal bands were observed in any part. Thickness, normal throughout; the *strips* yielded upon traction were from two to four lines in the great tuberosity, six to eight along the large curvature, and twelve or more in the small curvature and adjoining parts, the membrane was slightly injected in its thickness, but less than the subjacent tissue. *Small intestine* slightly tympanitic, white externally, with a slight shade of pink resulting from numerous and rather large muscular ramifications. It is distended by a large quantity of whitish-gray, troubled liquid, a little thick at first, but gradually diminishing in consistence as we approach the cœcum, where it is still abundant. A large quantity of irregular filaments, more or less long, and either solitary or united, float in it, looking like the moss of stagnant pools; no green liquid in any part. Some whitish or yellow mucus adhered to the intestine, much more abundant in the first than the second half, but every where easily detached. The general appearance of the mucous membrane was like that of the exterior, its thickness was normal throughout; in the jejunum it yielded strips from two to five lines,

afterwards from five to ten, longer in proportion as we approach the cœcum. It is *white* throughout, except little interruptions from vascular ramifications, which require close attention to be distinctly perceived.

The glands of Brunner existed in the last half of the ileum, at first they were scattered, and not larger than a mustard seed, afterwards to the three last feet more numerous, and of the size of a millet seed. The elliptic glands of Peyer were scattered in the whole length of the ileum, they projected very little above the neighbouring parts, from which they were distinguished by the absence of the valvulæ, and by grayish points which were observed in a certain number. The sub-mucous cellular tissue was moderately injected, the colour being much brighter after raising the internal coat. The mesenteric glands were small, healthy, of a fawn colour, (colour of weak café au lait.)

The *large* intestine was a little larger than natural, and contained a whitish-gray matter, very thin in the first half, but gradually thicker in the second, in the two last feet being nearly of the aspect and consistence of pus. The mucous membrane was pale throughout, except a slight shade of lilac in some points. Thickness normal throughout, the strips raised from it were from two to four lines in the cœcum, about the same length in the ascending and transverse colon, and three or four lines afterwards. Some crypts of half a line in diameter were seen in the two last feet of the intestine.

The *liver* of normal size, less red than usual, its tissue finely granulated, and easily penetrated by the finger, moderately gorged with blood. *Gall-bladder* distended by greenish and very fluid liquid. The *spleen* was deep red, and rather large, containing five or six cysts a line or two in diameter, which inclosed a calcareous matter. *Kidneys* healthy; nothing remarkable in the calicis and infundibula. The *bladder* of the size of an ordinary pear, contained about an ounce of troubled, gray liquid, slightly tinged with pink; its membrane was healthy.

W. W. G.

CASE II. Salle St. Charles. Service of M. Louis. Julie Française, shopkeeper, æt. 34, admitted April 12th, midnight. Her history, as given by herself, is, that during the 11th and 12th she had had diarrhœa, attended by borborygmy, but which was so slight during those days that she was not obliged to discontinue her occupation. She had no other symptoms except lassitude, sense of weakness, and loss of appetite, until the evening of the 12th, (7 P. M.) when there was sudden augmentation of the diarrhœa; the dejections became ex-

ceedingly frequent, and were accompanied with colic, nausea, vomiting, and cramps. The colic lasted but a short time, and soon disappeared; she vomited three or four times a liquid like water, which had no particular taste; the cramps commenced in the legs. She had not had any cephalalgia or tinnitus aurium; has experienced great oppression in respiration since 12 o'clock last night, since which the voice has been very feeble; general prostration for the last eight hours.

13th, 8½ A. M. Present situation. Has just been bled ℥vj. which has slightly relieved the sensation of oppression; and the expression of the countenance is better. Face and lips cold, of a violet colour; body generally livid, marbled with violet or purple spots, and cold; the patient, however, complains of the burning sensation of the heat of the surface, and throws her arms out of bed to relieve this feeling. The folds of the skin, (caused by pinching it up,) efface themselves slowly. No cephalalgia; sight and hearing good; intelligence unimpaired; almost entire aphonia; tongue cool, slightly violet at the borders; thirst intense, desires very cool lemonade; has no nausea after drinking. Abdomen is sunken, without pain even upon pressure at the epigastrium or other parts; no sensation of internal heat. Stools liquid; urinates freely; cramps frequent and severe in the legs, none in the thighs or arms; pulse 120, very small, regular; respiration twenty-four, costal. R. Frictions every half hour to reëstablish heat; injection of decoction of flaxseed with ℥ss. of laudanum every two hours, and—antispasmodic potion, ℥iv.; alcohol, ℥v.; syrup orange peel, ℥j.—℥ss. every half hour.

5 P. M. Feels better; respiration less frequent, not costal; face cold as ice; upper limbs covered with a cold sweat; eyelids half-closed; eyes immoveable; features fixed and unchanging. Upon looking at her we would suppose that the functions of life had ceased. Pulse 100, very small, extremely weak. Continue the treatment. Died 14th, at 5 A. M.

*Autopsy twelve hours after death.*—Frame large, well-formed, some slight violet appearances at the internal part of the thighs. This morning, (April 14th,) at 10 o'clock it was observed that the heat of the surface of the body was much greater than it was yesterday at 5 P. M.; no emaciation; embonpoint considerable; muscles of a fine colour and good consistence.

*Cranium.*—Numerous drops on the external face of the dura mater; cerebral veins distended by a large quantity of blood; pia mater moderately and universally injected; sub-arachnoid infiltration; cerebrum moist, of good consistence; cortical substance of corpora

striata darker than natural; medullary substance slightly injected; right lateral ventricle contains  $\frac{3}{4}$  of transparent serosity; left, half that quantity; cerebellum in the same state as the cerebrum; tuber annulare a little grayish and violet, firm, like the medulla oblongata.

Par vagum natural; superior cervical ganglion a little grayish, natural in volume and consistence. The semilunar ganglion accidentally removed with the pancreas, was not examined.

*Thorax.*—Pericardium healthy, moist, containing  $\frac{3}{4}$  of citron-coloured and limpid serosity. *Heart* of good size, contains a moderate quantity of blood, with some fibrine; coagula of considerable firmness in right ventricle; walls of the ventricles firm; the left thickened.

*Lungs.* Left pleura perfectly healthy; slight cellular adhesion to the lung; left lung heavier than natural; its inferior lobe red and engorged with blood; the upper contains some blood; in each lobe air is mixed with the blood. Right lung, adherent to the pleura throughout its extent, offering at its summit large vesicles, from one to two and a half lines in diameter, sometimes even greater—flabby, a little heavier than natural, reddish and grayish in superior lobes, red in the lower, containing less air, and same quantity of blood as the left lung.

*Abdomen.*—Stomach of moderate size, containing a fluid resembling the white of eggs, in which float mucous flocculi incompletely transparent. The mucous membrane is of a light violet-red in the half of the anterior face next the cardiac orifice; whitish or little green in the other parts. On the anterior and posterior faces, near the large curvature, are observed, say fifty points of half a line in their greatest diameter, where the membrane appears at first sight to have been destroyed; this, however, is not in the entire thickness; for upon detaching the membrane from the subjacent cellular tissue, the holes are not visible on the external face; these half-perforating orifices are equally demonstrated when a scalpel is passed through their centres. In the large tuberosity, in the posterior and anterior face of the great and small curvature, the membrane is observed of natural thickness and of good consistence. *Œsophagus* is covered with its epidermis, and offers some crypts.

Small intestine externally of a light rose colour in their whole extent; slightly injected, tympanitic; contains in the first half of its length a whitish liquid like thin porridge, in which floats a light mucus; in the second portion of the intestine the liquid is much thinner and more abundant; almost as thin as water, in which is suspended a multitude of grayish lilac flocculi, as if coloured by claret and water, and in the midst of which are numerous air-bubbles; the appearance

very like that of trifle, (*auf a la neige*.) The internal colour of the intestine when cleaned of mucus is the same as that externally. The odour emitted upon opening the intestine is very peculiar, disagreeable, and extremely pungent. The mucous membrane is of a dull white throughout, excepting the last two feet, where it is of a slight rose colour; its thickness is natural in the jejunum; it is slightly thickened in the ileum. Strips of five to six in length are obtained in the jejunum; six or nine in the ileum. In the last half of the intestine the elliptic glands of Peyer are of a pale white, milky colour, *apparently* not thicker than the neighbouring parts; careful examination by touching them, proves them to be more projecting in the last five feet; in this space are observed a small number of the glands of Brunner, which are at first of the size of the *semola*, afterwards three or four times larger. The mucous membrane in its extent has merely some vascular ramifications, whilst the subjacent cellular tissue is the seat of an injection visible internally and externally. Mesenteric glands slightly enlarged in size, especially those accompanying the ileum; their colour is ordinarily reddish, consistence good; in other instances they present the colour of coffee with milk.

Large intestine slightly enlarged in its first half, containing a whitish and slightly grayish matter, which is thicker and more abundant in the first than in the second half. The mucous membrane is generally pale; some red, projecting spots, caused by the engorgement of some crypts, which adhere to the subjacent cellular tissue, are seen in the transverse colon, and near the sigmoid flexure; the redness of the membrane is very deep; its consistence and thickness normal throughout.

*Liver* dry on exterior, and covered with a viscid substance; size normal, paler than natural, in other respects healthy. The gall-bladder contains a small quantity of a greenish-black, viscid bile.

*Pancreas* pink-white externally, nearly of the same colour as that of small intestines; size and consistence normal.

*Spleen* enlarged—otherwise sound.

*Kidneys* of natural size, perfectly healthy, calices and infundibulæ present nothing remarkable. *Bladder*—size of a large apple; livid at the fundus; parietes not thickened; mucous membrane covered with a light grayish, creamy substance, easily removed by the scalpel.

*Uterus* increased in size—one-third above the normal standard; walls of the body ten or twelve lines thick; its cavity contains a small quantity of a red liquid of the consistence of mucus, under which the walls are less red, except towards the angle of the fallopian tubes. *Ovaries* present nothing remarkable. W. W. G.

CASE III. Hôpital de la Pitié, Salle St. Athanase, No. 13. Service of M. Louis.—Jean Gonang, æt. twenty, sawyer of planks, living in the tenth arrondissement, entered the hospital at 8 A. M. During the winter has experienced much privation and his alimentation has been very insufficient. For eight days preceding the attack he had cephalalgia, but which is at present much diminished.

10 A. M. Present situation. Has been sick nine hours; yesterday worked as usual to 6 P. M. and with exception of head-ache was in good health. Slept well until 1 o'clock this morning, when he was awakened by violent colic; had no evacuation; an hour afterwards cramps and nausea supervened; had neither chill nor fever at the onset; sight impaired since 2 A. M.; has had four watery dejections without vomiting; he has neither nausea nor head-ache; has not urinated since last night; voice is much changed; cramps almost constant in the superior and inferior extremities, beginning in the toes and fingers; face violet, eyes excavated, encircled by a dark line; the whole face, particularly central parts, cold; legs and arms cold; thighs and abdomen of natural temperature; anterior part of the chest of livid whiteness; folds of the skin efface themselves quickly; tongue cool, natural on the edge, a little yellow in the centre; thirst intense, deglutition rapid, desires warm drinks; no disposition to urinate; constant anxiety; arms thrown out of bed; drowsiness or sluggishness of mind, though the patient is immediately aroused by the least question; respiration thirty-four, costal; pulse almost imperceptible; heart beats with force, 108; skin is insensible to pinching with the nails; treatment warm lemonade; venesection,  $\frac{3}{4}$  x.; if blood should not flow, twenty leeches to the epigastrium, and six to each side of the neck; dry frictions every half hour; if no amelioration after bleeding, give potions No. 1, 2 or 3, according to circumstances; a vein was opened immediately, but it was found impossible to procure blood; leeches were then applied, which drew well, but no amelioration followed, and death ensued at 3 $\frac{1}{2}$  P. M., thirteen hours after the onset of the malady.

The only feature of peculiar interest in this case was the absence of vomiting, a symptom which forms so constant a characteristic of the disease.

*Autopsy twenty hours after death.*—Frame well-formed, stature elevated, cadaveric rigidity very considerable, overcome with difficulty, lividity of the face, and violet spots on the limbs, muscles of natural colour, firm, not fishy.

*Cranium.*—Sub-arachnoid infiltration considerable; substance of the brain much injected, of good consistence; large quantity of serum



in left ventricle, corpora striata of darker colour than natural, medullary matter of cerebellum of violet red, costical part of a deeper colour than natural.

Par vagum healthy; superior cervical ganglion grayish as in the natural state; semilunar ganglion gray, a little livid, very friable.

*Thorax.*—Heart firm, of good size, containing a quantity of liquid blood; in the right ventricle was found a yellow, fibrinous clot. Lungs slightly viscid at their exterior, no serosity in the pleura, left lung light, inferior lobe gorged with blood, upper lobe of a bright red, colorization of right lung similar.

*Abdomen.*—Stomach augmented one-half in size, containing much liquid matter of the colour and consistence of whey, in which floated some oily drops. Mucus very adherent to the membrane, except at the great cul-de-sac, where the mucous tissue is of a pink colour like the peeling of the onion, and striped; the mucous membrane is soft in the superior fourth of the stomach, better consistence in other parts; in these portions the adherent mucus can be detached, but with difficulty, by the back of the scalpel. Mammillation of the membrane occurs in the half nearest the pylorus.

*Small intestine*, in general of a livid rose colour, owing to the sub-peritoneal injection; it is slightly distended in its superior third, containing a thick whitish matter, with flocculi resembling broken rice in the first half, and of a grayish tint; in the second half this fluid is reddish and more abundant; general internal lining of the intestine was a light pink tinge, slightly livid; valvulæ conniventes thicker than natural; plates of Peyer, of a dull white, very visible but not projecting beyond their usual level; after the evacuation of the fluid contents and washing of the mucous membrane, much mucus still remained adherent to the membrane; mucous membrane thickened in the first third, where strips are four to eight lines; they are longer near the cæcum; numerous cryptæ, (follicles of BRUNNER,) in the last half of the small intestine, which augment as we approach the cæcum, being in the last three feet very close to each other and larger than a millet seed.

*Mesenteric glands* large, size of a kidney bean, of a fawn colour.

*Large intestine.*—Colon tympanitic in its whole extent, increased to twice its natural size; containing a tolerably thick liquid of a milk-white or grayish colour, in considerable abundance, in the midst of which are flocculi; the odour of this liquid is peculiar, but not fæcal; general internal colour of mucous membrane, white, shaded with pink; cryptæ numerous; in the first foot, confluent, distant from

each other one to two lines; they afterwards become more rare and are again abundant until within two feet of the anus, when they entirely disappear; mucous membrane is every where thickened; yields strips eight to ten lines in length every where. *Bladder* size of a large pear; contains a little liquid, of colour of urine; membrane is pale and healthy. *Liver* of good size, containing a moderate quantity of blood; more easily penetrated by the finger than usual; its colon tolerably deep; gall-bladder contained a considerable quantity of dark green bile moderately fluid. *Kidneys* healthy. *Spleen* enlarged but healthy.

W. W. G.

CASE IV. Hôpital de la Pitié, Salle St. Athanase, No. 11. Service of M. Louis.—A rag-gatherer, aged thirty, was brought into this ward on the morning of April 4th. He had been taken sick at midnight of the third; the day preceding, had worked as usual. The attack commenced by vomiting, numerous stools, intense and universal cramps, which have continued; he had no pain in the abdomen before the appearance of the cramps. April 4th, 8½ P. M. Present situation. Has universal cramps, the intense pain of which forces cries from the patient; expression of countenance that of intense suffering; at intervals gnashing of teeth; face livid and violet; eyes sunken in the orbits, at times watery; profound drowsiness, and does not reply to questions addressed to him; tongue is very cool and moist; has no nausea; thirst intense; deglutition rapid; voice extremely feeble; the surface of the skin of the breast and extremities extremely cold, and impossible to warm it by frictions; experiences relief from dry frictions by flannel; inferior members of a livid paleness; sight and hearing good; pulse imperceptible; respiration twenty-eight, without effort; no pain at the epigastrium, except at the moment of the cramps; experiences an agreeable sensation at the epigastrium after taking the following potion in doses of ℥ss. R. Antispasmodic mixture, ℥iv.; alcohol, ℥j.; laudanum of Sydenham, ℥j.

Prescription. The above potion every half hour, or oftener, if the heat is not reëstablished—one-quarter enema of linseed with laudanum, ℥j., every two hours.

4 P. M. No cramps for an hour; plaits of the skin of the neck efface themselves with difficulty; entire face cold, of a pale lividness, complains of sensation of heat, especially of his forearms, which are however livid and cold; thighs cold; the body of a natural temperature, except the parts which are uncovered; breast livid; intelligence perfect, answers are prompt; natural brilliancy of the eye; no urine, no vomiting, no stools; beating of the heart feeble, 108; pulse insen-

sible on the left side, some think that they feel it on the right; respiration twenty-four, not difficult; agreeable sensation at epigastrium, still continues upon taking the alcoholic potion. (Lemonade, potion from hour to hour, dry frictions with flannel to limbs.)

9 P. M. Extreme feebleness, cramps in the extremities, dry frictions have been applied where the cramps have existed.

April 5th, 8½ A. M. Face of a livid paleness; central parts pale; eyes dull, covered with mucus; respiration slow, fourteen; pulse imperceptible; body of ordinary temperature; abdomen soft, insensible to pressure; the forearms, though covered, cold. Half an hour since abundant discharges by stool of the colour of lees of wine. Friction to lower extremities. R. Antispasmodic potion, ℥iv.; alcohol, ℥ij.; syrup of orange peel, ℥j.—℥ss. every hour.

3 P. M. Respiration continues. Death at 4 P. M.

*Autopsy, twenty hours after death.*—Rigidity of the muscles considerable; anterior part of the right arm violet; lividity of the lower extremities.

*Cranium.*—Sub-arachnoid infiltration extremely slight; cortical substance of cerebrum of a pink colour, slightly livid; corpora striata pink but deeper; brain in general firm, moderately injected; about a spoonful and a half of serosity in each lateral ventricle; cerebellum in a situation analogous to that of the cerebrum. Par vagum of ordinary thickness, a slight shade of pink externally, white within; superior cervical ganglion of ordinary size and violet colour.

*Thorax.*—Pericardium contains half an ounce of serosity; heart of middle size, of good consistence, containing a large quantity of liquid blood without clots. *Lungs*, some cellular adherences to the right lung, very emphysematous at the base, not engorged; lateral adherences very slight; left lung has but slight adhesions.

*Abdomen.*—*Stomach*, a little distended, containing a tolerably abundant, greenish liquid, in which float mucous flocculi; mucous membrane of pale pink in a part of the anterior face; a pink of a deeper tint and a little livid in other parts; strips one to two lines in great cul-de-sac, in other places of natural thickness; no where mammillated.

*Small intestines*, externally of a redness slightly livid in all its extent, except the four or five first feet, where it is only of a light rose colour; the intestine contains a liquid which is tolerably abundant in its first half, of a colour at first slightly yellow, then of a red, more or less intense; the internal appearance of intestine is a light opaque yellow in the four first feet, then of a livid red, interrupted by ecchymosis, or red spots of a deep colour; these are limited to the mucous

membrane of the jejunum and to the three or four last feet of the ileum, where they are more numerous and nearer one another; in the first four feet of jejunum the mucous membrane is of a light opake yellow, and its consistence for this distance is a little less than in the normal condition; in the rest of the intestine the membrane is more or less rose-coloured, (pink,) and slightly injected, and is perhaps a little thicker than in the healthy condition; in the last two-thirds of the ileum, the crypts of Brunner are very rare, small, of the size of a grain of millet; afterwards they become more numerous and larger, so that in the length of two feet they are from one-fourth of a line to a line in diameter; plates of Peyer healthy as well as the mesenteric glands.

*Large intestine* much augmented in volume, and contains a tolerably large quantity of liquid, of a red colour, like the dregs of wine, very fluid, and holding in suspension the same quantity of mucous flocculi as contained in the small intestine; mucous membrane of a livid red colour, more or less deep throughout its whole extent, thickened in the cæcum where it yields strips of four or five lines in length, in the ascending colon strips of ten or twelve lines; the thickness of the membrane is rather greater than natural, but it adheres less firmly to the subjacent cellular tissue; the membrane is extremely soft in the first two-thirds of the transverse colon where it is completely destroyed in some points, presenting the same appearance and the same consistence in the second third; of natural consistence and thickness afterwards. *Liver* of small size, tolerably consistent, healthy; bile sufficiently abundant, dark green, moderately thick. *Bladder*, conoid, containing the amount of volume of a hazlenut of grayish mucous liquid; coats extremely contracted, four lines in thickness; aorta containing a large quantity of liquid blood, no redness.

C. W. P.

CASE V. Salle St. Charles, No. 11. Service of M. Louis.—Hevet, (Charlotte,) a seamstress, twenty-nine years, married April 14th, 1831. For the last month she has suckled an infant. Was taken ill on 13th, at 4 P. M. when a diarrhœa which had commenced in the morning became very violent; an hour afterwards, at 5 P. M. vomiting of a bitter matter mixed with the food which she had taken at 12 o'clock. Cramps came on simultaneously with the vomiting, the cramps recurring very frequently, and the vomiting three or four times. Slight pain in abdomen.

She compares the pain rather to a feeling of suffocation than an acute suffering. Kept her bed since the onset. At 7 P. M. she had cold

sweats not accompanied with heat. Voice feeble since 8 P. M. Suppression of urine. No stools since her arrival here. Matter vomited always bitter. Tinnitus aurium. Entered at 2 A. M. 14th.

14th 8 $\frac{1}{4}$  A. M. Present condition. Face violet and cold, especially the nose, very moist. Arms cold, but she throws them out of bed in consequence of sensation of heat. No head-ache. Dizziness upon rising. Pain at epigastrium, hypogastrium and in the back, experiences shooting pains at the epigastrium. No hiccoughs in abdomen even on pressure. Tongue violet and cool. Respiration impeded, thirty, and costal. No pulse at wrist. Desires cold applications to the skin, especially on abdomen. Suppression of urine, which greatly excites the attention of the patient. No cramps. Lemonade. Thirty leeches to epigastrium.  $\frac{1}{4}$  injection of flaxseed, with 3ss. laudanum, q. b. h.; frictions on limbs, q. b. h.

6 $\frac{1}{4}$  P. M. No sensation of coldness, yet the upper extremities are cold in their whole extent—arms constantly out of bed. Face cold. Sight a little troubled. Voice sufficiently feeble. Complains of passing no urine. Pain at the hypogastrium. Thirst tolerably great. No vomiting. Respiration high and accelerated, pulse insensible. Thirty leeches to hypogastrium. Injection with laudanum.

Death at 2 $\frac{1}{2}$  A. M. 15th.

*Autopsy, seven hours after death, 15th.*—Frame rather large, corpulent. The coldness is not complete, and less so than during life at the last visit. Some lividity at the upper and internal part of the thighs. The left mamma was slightly violet, rather large and very moist, yielding a flowing liquid of milk colour; right mamma not remarkable; muscles of good colour. *Cranium.* But little blood on the external surface of the *dura mater*, no *sub-arachnoid* infiltration, and scarcely any serosity in the ventricles. *Cortical* substance and *corpora striata* firm and natural. The *medullary* portion was very little injected, but marbled with livid spots. No appreciable lesion in the rest of the brain.

*Thorax*—*Pericardium* healthy. *Heart* of moderate size, containing a tolerable quantity of black liquid blood in which are some unformed coagula. *Left lung* not adherent, no liquid in pleura, internally of bright red colour, becoming brownish-red in the lower lobe which was a little heavy, but in other respects natural. *Right lung*, similar to the left in weight and appearance, except the upper lobe which was much paler. *Abdomen.* *Stomach* of good size, livid gray externally and containing a tolerable quantity of grayish-yellow liquid, which was very fluid with flocculi of light mucus. *Mucous membrane* was grayish or whitish along the small curvature, whitish with a slight

pink tint in the other parts, some red points were seen in the great cul-de-sac. The membrane was a little injected in its substance and slightly mammillated in a small part of the large curvature, which was coated with a little viscous mucus; consistence and thickness normal throughout.

*Small intestine*, moderately distended in its whole length, but rather larger in its last than in its first half. Its colour externally was white with a shade of pink in the first four-fifths, afterwards more or less grayish-green. It contained in the first three feet a moderate quantity of greenish and rather viscous mucus, then an opaque, whitish liquid like milk, more liquid and more turbid as it approaches the cœcum, so that in the last four or five feet it is almost as fluid as water. Internal aspect of the intestine was similar to the exterior. The mucous membrane was pale in its whole length, a slight pink tint observed in certain parts resulting from the injection of the sub-mucous tissue. The membrane yields strips of only two or three lines in the first four feet, afterwards eight to twelve, it was not at all thickened in the first half, slightly so in the three or four feet which followed, and afterwards normal. The glands of Peyer were whitish, with a slight shade of lilac, easily distinguished by the difference of colour, but of normal thickness. The glands of Brunner were not numerous, and observed only in the last five feet, where they were scattered and not so large as a millet seed.

*Large intestine*, voluminous in its first and last third, containing a moderate quantity of grayish, turbid, but very fluid liquid, with no signs of mucus; the liquid has a dirty shade in the second half, three or four fragments of yellowish friable matter were found in it, resembling grease. The mucous membrane whitish and grayish throughout, was slightly shaded with livid pink; some points in the first half were deep red, and the whole inferior third was slightly tinged of the same colour. Consistence and thickness natural throughout. The cellular tissue was generally more or less injected, but the membrane itself only in the red parts. Numerous cryptæ were visible in the whole length.

*Liver* of good size, was rather pale and flabby, but not wanting in cohesion; it contained a moderate quantity of blood. Bile abundant, moderately fluid and of dark-green colour. *Spleen* normal. *Kidneys* healthy. *Bladder* contained only a little creamy liquid. *Uterus* of usual dimensions, rather flabby, redder and more moist than natural, its cavity was brownish-red but contained no blood. The *par vagum* was marked with two or three narrow longitudinal lines in a part of its length, but it was perfectly white internally, and the natural size.

The middle and upper cervical ganglions of the sympathetic, very pale, of moderate size and very coherent. W. W. G.

CASE VI. Salle St. Charles, No. 28.—Leger, ætatis 40, work-woman, living Rue du Pont aux Tripes, twelfth arrondissement, admitted 13th of April. This patient's general health was very good—seldom ill before this attack; during the winter was rather subject to privations, want of food, and lived in a cold and damp room. Her illness commenced yesterday evening at 8 o'clock. The first symptoms were diarrhœa with colic pains, followed two hours after by vomiting and cramps; the cramps commenced almost simultaneously in the lower and upper extremities. According to the patient's account, the vomitings were first composed of the food she took, afterwards of a liquid of a somewhat green colour and bitter taste, and the stools of a yellowish-brown colour. This state, accompanied with a general cold sensation, persisted with the same intensity up to the period of her admission, the 13th of April.

At our visit we found her in the following situation. The skin in general was of a deep violet colour, principally the lips and the hands; the eyes without their usual lustre, sunk in the orbit, the orbit was encircled by a well-marked blue rim; the countenance blue, expressive of anxiety; cheeks, nose, forehead and chin, cold and livid; breath almost cold; tongue cold, but moist, and of a yellowish hue in the centre, slight red on its borders. The extremities cold and livid, particularly the hands and feet; pulse at the wrist insensible; strong costal respiration; the tongue had also a violet tinge; the epigastric region painful on pressure; general debility, such as to render her almost incapable of replying to our questions, however her intellectual faculties were perfect, as well as her senses, such as her sight, taste, smell, &c. &c.; she complained of noise in her ears, and a little head-ache; frequent liquid, yellow stools, and vomiting of a whitish-coloured liquid, in part composed of the drink she took; cramps frequent, particularly in the lower extremities, and a sensation of oppression in the chest. Voice completely extinct; somnolence; and the general appearance of the countenance such as that one would imagine it that of a corpse, so like was its expression that we were obliged to shake the patient to be certain, she was living; the right conjunctiva was considerably injected. Prescription, two half enemata with  $\mathfrak{z}$ j. of alcohol, and twenty grains of camphor in each; the vehicle being for each  $\mathfrak{z}$ vi. of decoction of starch. A potion composed of—*aquæ menth. piperitid.*  $\mathfrak{z}$ ij.; *æther sulphurici*,  $\mathfrak{z}$ ij.; *syrup. cit. aurantii*,  $\mathfrak{z}$ i. *Misce.* A table-spoon-



ful every twenty minutes; mustard sinapisms on the belly, and an ointment composed of axunge,  $\mathfrak{z}\text{ij}$ ., ammonia,  $\mathfrak{z}\text{i}$ ., mixed together, and rubbed to the anterior part of the thorax; sinapisms to the legs and feet.

14th April, at 8 o'clock, *A. M.*—The face less blue, lips less violet than yesterday; tongue natural colour, continues cold; thirst, nausea without vomitings, pain around the umbilicus, involuntary stools, suppression of urine; pulse 100, very small at the wrist; the cramps persist, as well as the aphonia; respiration constantly costal, thirty-six in a minute. Prescription—lemonade, the same potion as yesterday;  $2\frac{1}{2}$  enemata with  $\mathfrak{z}\text{i}$ . alcohol and  $\mathfrak{z}\text{i}$ . camphor in each. The ammoniacal ointment on the chest as yesterday; sinapisms sprinkled with spirit of turpentine to the extremities.

15th, 8 o'clock, *A. M.*—The ammoniacal ointment has determined a slight rubefaction. The patient took but half of the potion, face and extremities cold, tongue cold, little thirst, nausea and some vomitings, no stools, nor urine, nor desire to make water, absence of the radial pulse, pulsations of the carotid 84, respiration accelerated, thirty-six costal respirations. Prescription—lemonade,  $\frac{1}{2}$  enema with  $\mathfrak{z}\text{i}$ . alcohol,  $\mathfrak{z}\text{i}$ . camphor in it, and  $\mathfrak{z}\text{v}$ . of decoction of starch as vehicle. All these symptoms having augmented during the day, the patient expired at 4 o'clock, *P. M.* the 15th of April, having retained her reason almost to the last moment.

*Autopsy*, 16th of April, at 9 o'clock, *A. M.*—The cadaverous stiffness was very little marked; the hands, knees, and feet presented a very remarkable violet appearance; the skin of the abdominal parietes was of a greenish hue; the inferior vena cava and the vena porta were full of a black blood of a pitchy consistence and colour; the stomach very much contracted, diminished in size nearly to the volume of the small intestine, and contained a blackish mucus, in which were to be seen small white bodies; the mucous membrane of the great tuberosity of the stomach was of a slight rosy colour; this colour was more marked in proportion as it extended along the great curvature of the organ, to the extent of four inches; in the great curvature the mucous membrane was of its natural consistence; the mucous membrane of the rest of the stomach presented a mammillary appearance; the mesenteric veins full of black blood; two ounces of a brownish viscous liquid in the cavity of the peritoneum; the small intestines distended by a great quantity of gas; duodenum contained a small quantity of thick mucus, of a brownish-yellow colour; the mucous membrane of the jejunum was covered with a yellowish

mucus, of a thick and adhesive consistence. In the beginning of the ileum a large quantity of a yellowish liquid, in which floated some slimy, semitransparent flocculi; a foot lower down in the intestine the matter was more liquid, of a chocolate colour, and contained a smaller quantity of the corpuscles spoken of above; this substance was extremely foetid; the colour of the mucous membrane of the intestines, duodenum, and jejunum, was of a pale rose; red blotches, 1st, twelve lines in length and six in breadth; 2d, seventeen lines in length and six in breadth; 3d, twenty lines in length and five in breadth; at the commencement of the ileum they become of a deeper colour, and the cellular tissue under the mucous membrane was considerably injected; a foot further forward the mucous membrane was of the colour of lees of red wine; the colour further forward of the mucous membrane was rather grayish, uniformly so; about two feet from the extremity of the ileum the mucous membrane was of a deep greenish-red colour; some insulated follicles towards the extremity of the small intestines. All the *plates* that we found on the mucous membrane were of a greenish colour, of a granulated appearance, and hard to the touch, little swollen, and perforated by small alveoli; the large intestine distended with foetid gas, and contained a homogeneous, *chocolate and milk-coloured* liquid; the mucous membrane of the cæcum was extremely foetid, and presented some red blotches here and there, with the sub-mucous cellular tissue considerably injected, and the mucous membrane softer than natural. At the origin of the right lumbar colon, and in the extent of two inches, the mucous membrane was very red and softened; the left lumbar colon was of a pale colour; in all the extent of the transverse colon there existed numerous *very small* ulcerations, the largest of which was about six lines in diameter; these ulcerations were round, their borders red, and their basis, or rather their centre, of a pale grayish colour; the mucous membrane softened in all its extent; the sigmoid portion was pale and white; the superior part of the rectum of a livid red colour in the extent of six inches; its lower extremity presented a livid appearance; the liver was livid in all its extent; the middle of the right lobe was of a whitish colour; its substance was but little injected with blood of ordinary consistence; the gall-bladder distended with very black, thick bile; spleen four inches in length, two in breadth, of a red colour and ordinary consistence. Heart; its right cavity contained a fibrinous clot of blood, discoloured; coagulated black blood in the left ventricle; a fibrinous clot little discoloured in the left auricle. The brain and the uterus presented nothing re-

markable. The bladder was quite contracted, and contained no urine; its mucous membrane appeared natural. The kidneys also natural.

Case communicated by M. EAGER, attached to the medical service of La Pitié.

CASE VII. Salle St. Charles.—Genvière Blanchat, æt. 23, work-woman, living Rue Fosse St. Marcel, twelfth arrondissement, admitted to-day. She has suckled an infant for the last month. She was perfectly well yesterday, working as usual. The attack commenced suddenly this morning at 7 o'clock, by diarrhœa accompanied by vomiting; cramps followed two hours afterwards, and were confined exclusively to the lower extremities. From that time extreme weakness, and she has been obliged to be in bed since.

*April 12th, 4 P. M.*—Face, hands and forearms bluish; eyes very hollow; lips violet; entire face cold, except the forehead, which is of natural temperature; hands and forearms cold; feet cold; neck and upper part of chest almost of natural temperature, but of a bluish-white colour; rest of the body of ordinary heat; folds of the skin of the neck slowly effaced; sight troubled; hearing good; voice feeble since last two hours; intelligence perfect; complains of sense of oppression, and asks to be bled; tongue cool, whitish, and a little livid; thirst intense; patient has not the sensation of cold either in the hands or feet; pain she experiences is that of oppression, does not resemble colic; has urinated within the last two hours; pulse insensible. R. Lemonade for drink. Antispasmodic potion,  $\mathfrak{z}\text{vj.}$ , with syrup diacord.,  $\mathfrak{z}\text{j.}$ , of which take  $\mathfrak{z}\text{ss.}$  each hour; one-fourth of enemata of infusion of flaxseed, with  $\mathfrak{z}\text{j.}$  of laudanum; venesection; forty leeches to the epigastrium; frictions with ammoniacal liniment.

Immediately after the bleeding she appeared much better; respiration was much relieved. Death however ensued at 2 A. M. of 13th, nineteen hours after the onset of the disease.

*Autopsy, 13th, 10 A. M. eight hours after death.*—Frame large and well-formed; face cold as before death, but heat of the body and thighs well preserved; cadaveric rigidity in the arms, none in the inferior extremities; lividity on the internal and upper part of the thighs.

*Cranium.*—No sub-arachnoid infiltration; pia mater moderately injected; cerebrum soft, of ordinary coherence, not injected; cortical substance evidently darker than in the natural state, being of a livid pink nearly uniform throughout; corpora striata much less dark; the colour nearly natural; several spots ("marbrures,") of livid pink colour in the thickness of the white substance; none of these marbrures spotted with blood; tuber annulare flabby, livid, of small volume; me-

dulla oblongata firm, of usual whiteness; cerebellum in consistence, colour, &c. like cerebrum.

*Semilunar ganglion* tolerably voluminous, gray externally, less so in the interior where are seen white spots; it is one and a half lines in thickness in all points; par vagum perfectly healthy and white; superior cervical ganglion grayish and thin; mammæ much developed; that of the left formed of a multitude of grains separated by dense cellular tissue, furnishes a whitish liquid; right mamma of an unequal pink colour, granular like the left, less in size, containing a much larger quantity of very fluid lactescent liquid.

*Thorax.*—Pericardium healthy, moist, containing from  $\frac{3}{4}$ ss. to  $\frac{3}{4}$ j. of transparent serosity; heart of normal size, contains a large quantity of liquid black blood, in which are some ill-defined coagula of little consistence. *Lungs.* The left free in its whole extent, light, of a bright red externally, more deeply coloured internally, especially the upper lobe; a portion of the lower lobe has less consistence than the other parts, but is not hepatized; the right lung is free in its whole extent; it is contracted on itself, and is of a pale pink colour; the inferior lobe is precisely like the superior of the left side. *Abdomen.* Great epiploon, slightly moist and viscous, covering the small intestine in its whole extent. *Stomach,* at least one-half larger than natural, much distended by gas, and containing a moderate quantity of dark green yellow mucus; internal face of stomach in its superior two-thirds of an unequal livid pink; in its pyloric third more or less yellowish and grayish, lightly dotted with red; in its posterior face, with the exception of the extremity of the great tuberosity, a similar appearance is presented, and immediately to the left of the small curvature, the yellow becomes tolerably intense; the membrane is mammillated in the third near the pylorus; more evidently along the large curvature than in any other part, and especially in a part of the posterior face near this curvature, about an inch square; the mammillation is caused by rounded elevations, a line or less in diameter, lilac at their circumference, but with a white or more rarely a livid red point at their centres; between the elevations just described, and separated from each other by spaces of one-fourth to a millimètre, are small rounded spots, or little longitudinal depressions, resembling the incision of a sharp instrument; this appearance is probably only an advanced state of the red pointed injection described near the pylorus; a large number of these spots are lilac at their circumference and whitish at their centre, but they are confluent in the space of two inches and without central points; these spots last described, on careful inspection, were seen to be still more

numerous on the anterior face of the stomach near the pylorus, and sometimes three or four were united, and projected beyond the ordinary level, the projection being most evident where the mammillation was most marked; a surface of about four inches on the anterior part of the stomach near the pylorus was also mammillated; the mucous membrane was a little injected in its thickness in its whole extent, the thickness greater near the cardia than in other points; duodenum similar to the jejunum; some crypts were there visible.

*Small intestine* very moist externally; slightly tympanitic in the first half of its extent nearest the stomach, containing besides a certain quantity of gas, a grayish, turbid liquid, sufficiently fluid, holding in suspension a great number of light yellowish flocculi, not homogeneous, but composed of filaments more or less flattened and more or less united external colour of intestine grayish, and violet red; internal aspect of same appearance; in the first three feet of the jejunum the crypts of Brunner are numerous, placed near each other, and of the size of a grain of millet; afterwards they are not observed until they reappear at the beginning of the ileum, in the whole extent of which they are very numerous, much more so than in the jejunum, and their number greatly increases as we approach the cœcum; their ordinary size is that of a grain of millet; they are of a whitish colour without central point. These crypts are often confluent, distant from each other from one-fourth to half a line; where they are closest, the membrane is manifestly thicker than in the natural state and proportionably more so in the last part of the ileum than in the last portion of the jejunum. The mucous membrane is of good consistence in the whole extent of the ileum; in the first three feet of the jejunum, strips of only two to three lines in length are obtained; its consistence is normal in other points. Some mesenteric glands, corresponding with the commencement of the jejunum, are more or less violet in their whole thickness, their size that of a kidney bean; others answering to the last part of the ileum were similar in appearance; some glands of Peyer were observed, but they were but little apparent on account of their violet red colour; their size was proportioned to the volume of the intestine, but scarcely projected beyond the neighbouring parts; a lumbricus was found in the second half of the small intestine.

*Large intestine*, slightly enlarged in the first part, and contains a sufficiently large quantity of a flowing liquid, yellowish and turbid as if puriform; mucous membrane of a pale white throughout; thickness normal every where; strips of twelve to fifteen lines in the two extreme thirds, less in the intervening space; no crypts visible.

*Liver* dry; gall-bladder shrivelled, containing a little very dark and moderately fluid liquid. *Spleen* softer and more easily penetrated than natural. *Kidneys* healthy, a little violet. Urinary bladder very small, containing a little thin milky fluid, injected in the inferior fundus; the membrane natural in other parts. *Uterus* small, ovaries voluminous. C. W. P.

CASE VIII.—Salle St. Paul, No. 33. Service of M. Andral. Baire, ætat. thirty-eight, a cook, living Rue Copeau, No. 22, was admitted to-day at 7½ A. M. Was perfectly well the morning of the 15th—in the afternoon was much alarmed and agitated upon seeing the porter of the house in which she lived, die suddenly of the prevailing malady; she was seized immediately with chills, trembling of the limbs, followed soon after with diarrhœa—the dejections were numerous through the succeeding day, (16th,) but did not prevent the patient from following her occupations. Early in the morning of the 17th, great augmentation of diarrhœa, violent vomiting and cramps.

8 A. M. Present situation.—Face cold, colour violet, limbs cold, covered with a clammy moisture; eyes sunken in the orbits, encircled by a dark blue line; immobility of the features; mouth half-open; voice completely extinct; tongue cold, moist, and white. No pain in the abdomen; dejections resemble rice water, in which are white flocculi. No radial pulse—that of carotids 130, extremely feeble. Respiration 28, costal; intellect perfect.

Treatment. Sinapism to the abdomen, frictions with ammoniacal ointment on the limbs, blister six inches square between the shoulders. Lemonade for drink.

6 P. M. Face of the same colour as this morning, cool; nose very cold; body slightly warm with clammy sweats; arms warmer than in the morning; eyes half-closed, the pupils turned upwards, showing only the lower portion of sclerotica. Respiration 33, its force increased; has not vomited; stools involuntary; intelligence unimpaired.

April 17th, 7 A. M.—Expression that of extreme anxiety; face cold; eyes surrounded by dark blue line, not injected; skin of limbs cool. Tongue dry, slightly red; continual thirst; has not vomited since yesterday. Pain in the abdomen; radial pulse almost imperceptible; hands violet. Carotids have 120 pulsations per minute. Respiration 32. Little urine.

R. Continue the external application of yesterday.

4 P. M. Face is better; coldness diminished, though the nose is

still like ice. Skin dry; has had no vomiting; two dejections. No urine; complains of colic; tongue is red at point, and is thickly covered elsewhere with a white coating; colour of hands is a deep violet. No radial pulse. Respiration 33, slightly costal. Intelligence good.

*April 19th.*—She was pulseless and delirious; skin of extremities cold, but the expression of the countenance did not resemble that of the ordinary choleric. Death at 11 $\frac{3}{4}$  P. M.

*Autopsy, 20th of April, 8 $\frac{1}{4}$  A. M. nine hours after death.*—Frame well-formed; body somewhat inflexible; surface slightly marbled with violet.

*Cranium.*—Vessels of the dura mater distended by blood, in other respects the membrane was sound. No arachnoid infiltration; vessels of the pia mater not more injected than usual; in colour and consistence the cerebral substance and cerebellum were normal, but were rather more injected than usual. The rest of the nervous system was not examined.

*Thorax.*—*Pericardium* dry, in other respects healthy, contained no serosity. *Heart* quite warm, contained a considerable quantity of liquid blood, in which were seen clots of a small size, which offered the same deep black colour of the blood. The texture of the heart, and that of the lining membrane, of proper consistence, though their colour is much paler than usual. Heart of normal size. *Lungs* crepitous throughout, presenting only a slight engorgement posteriorly.

*Abdomen.*—*Stomach* contains a considerable quantity of yellow, frothy liquid, which adhered to its internal face, and resembled mucus. Near the pyloric orifice the posterior surface in the extent of several inches was shrivelled or wrinkled—the mucous membrane covering these wrinkles was deeply injected, yet of good consistence. In the great cul-de-sac, the mucous membrane was of a whitish colour, and of its ordinary consistence and thickness. Along the small curvature it presented a punctated redness, retaining in other respects its natural character; near the pylorus, on the anterior face of the organ, the mucous membrane offered an uneven or mammillated surface for the breadth of three fingers. The stomach of its natural volume. *Small intestines* presented an augmentation of volume in all its extent, and contained a considerable quantity of yellowish liquid matter, mingled with flakes of mucus. In the commencement of the last half, this matter became whiter, and afterwards assumed a reddish tinge. The internal surface of the small intestines throughout its extent was deeply injected with blood to the extent of about a foot and a half above the ileo-cæcal valve; the usual vivid red colour of the mucous surface was interrupted by trans-



verse bands of a brownish-red, formed by the partial thickening, softening, and infiltration by blood of the mucous membrane at those points; this infiltration is so considerable, that the blood was easily forced out by slight pressure. The sub-mucous cellular tissue was permeated by an infinity of blood-vessels, and throughout offered a reddish tinge; it was moist, and the mucous membrane was readily detached from it. Of the glands of Peyer, eight were observed, having the average dimensions of three by ten lines; they were of a deep red granulated aspect. In the small intestines were found two lumbrici, and several inches of tænia.

The *large intestine* voluminous, and was filled with a liquid in consistence and colour resembling the dregs of wine, in which were found four large lumbrici, a few hydrocephali, and some fragments of tænia. The mucous membrane of the cæcum and colon was of a violet redness; that of the transverse colon whitish; in the descending colon there were several spots of a deep black colour, which seemed the product of a sanguinolent infiltration of its tissue; three similar ecchymoses existed in the rectum. The *liver* was of a dark brown, and of its ordinary consistence and volume, and contained a considerable quantity of blood, especially in its large vessels. *Gall-bladder* was distended by bile of a deep green or black hue, which also filled the biliary ducts. The *vena porta* distended by blood.

*Spleen* somewhat longer than usual, being five by three inches in its dimensions; its consistence good. *Kidneys* small, contained a small quantity of lactescent liquid; otherwise apparently healthy. *Bladder* contained about  $\frac{3}{4}$  of urine, in which swin a quantity of mucous floculi. The mucous membrane of its fundus was considerably injected.

*Ovaries* of double their ordinary size, and filled with black coagulated blood. *Uterus* in the natural state, with the exception of being somewhat larger than usual.

Autopsy furnished by Dr. COOKE, of Virginia.

CASE IX. Salle St. Charles, No. 4. Service of M. Louis. Magnot, ætat. sixty-nine, washerwoman, entered April 14th, at 10 A. M.—Onset of disease last night at midnight, but she has had diarrhœa for the last three weeks, affecting her only in the night, and obliging her to rise about three times? For the last seven days she has felt herself considerably indisposed, and last night the stools were much augmented in number, she had no vomiting and no pain before entering the hospital, excepting very slight cramps, thirst very intense, feeling of coldness during night, attributed by the patient to her rising in the cold. Voice feeble, especially within a few hours, com-

plaints of general feebleness; urine constant; limbs cold on arrival—since frictions are warm; alimentation insufficient during winter, lives in a chamber badly warmed. Actual state, 5 P. M.—Face cool, slightly moist, not violet; arms cool, very moist; inferior extremities dry; temperature more elevated than in natural state; eyes hollow; eyelids half-closed; sight obscure, often double; lips violet; hearing good; no cephalalgia, nor feeling of heaviness in head. Aphonia almost complete; tongue violet, cool, very moist; thirst intense; no nausea after drinking; no pain in epigastrium; feeling of pain in abdomen, resembling the cramps of extremities; urine involuntary; throws her arms out of bed, in consequence of her *feeling* of heat. Pulse eighty-four, regular, very small, easily counted. Respiration thirty-two, a little costal. R. Enema of flaxseed, frictions.

15th. Dead at 7 A. M.

*Autopsy, on 16th, at 10 A. M. twenty-one hours after death.*—Skeleton well-formed; moderate embonpoint; lividity of upper and lower extremities.

*Cranium.*—A great quantity of blood was found externally to the dura mater, generally resulting from rupture of the longitudinal veins; arachnoid very moist, considerable infiltration beneath it; pia mater injected; cerebral veins distended; substance of brain very moist; 5x. of serum found in the right ventricle, clear and colourless; in left there was rather more. Cortical substance and corpora striata of their natural colour, and the cerebral mass in general of good consistence. Cortical substance of the cerebellum was pink, slightly violet, other parts were healthy, with the exception of a little injection of the medullary substance.

*Thorax.*—Pericardium healthy. Heart at least two-thirds larger than natural; this increase was derived entirely from the increase of the left ventricle, the walls of which were an inch in thickness, but its cavity rather diminished than enlarged. The semilunar aortic valves were healthy, except in their adherent portion, where there was a small induration of the thickness of a millimetre. A moderate quantity of liquid blood containing some fibrinous coagula was found in the cavities of the heart. Left pleura healthy; a little moist, and viscous, free from adhesions. Lung of same side was light, emphysematous in its whole extent, and in the posterior and inferior part was a little tumour of the size of a kidney bean, formed by these dilated vesicles. Right pleura was in a similar state with the left, but the lung was larger, lighter, of a pink colour throughout, emphysematous only in its inferior lobe, and without engorgement of blood.

*Abdomen.*—Stomach large, one-half larger than in the natural condi-

tion, it contained a tolerable quantity of a light green liquid, in which were suspended a number of mucous flocculi of a deeper green colour. The mucous membrane was of a reddish colour, in its whole posterior part of a deep red as also in its great cul-de-sac near the cardia, where the red colour seems to arise from a multitude of points more or less confluent. On the anterior face of the stomach near the large curvature, the red colour was not so deep, especially in the space of five or six inches, about two inches distant from the pylorus. The membrane was not mammillated. The thickness and consistence of the membrane are natural, except on the posterior face near the great cul-de-sac, where it has merely the consistence of mucus, augmenting again in approaching the pylorus where it is natural. The *small intestine* was a little larger than natural, and tympanitic throughout, it contained a grayish-red liquid in the first part of it, then a perfectly red one as fluid as water. In the liquid were some mucous flocculi, grayish and brown, floating in water, and at first sight, looking like moss. The colour of the internal surface of the intestine like the exterior, was pink in its whole length. Some glands of Brunner, much scattered, a little less than a millet seed, were observed in the first four or five feet of the intestine, afterwards they became more numerous, and not larger than a mustard seed, except in the last three feet, where their size was the same as in the beginning of the jejunum. The membrane was every where of its natural thickness even in the jejunum, and yielded on traction strips of six to ten lines, its colour was *pale white*. The sub-mucous cellular tissue is more or less injected in the whole length of the organ. The glands of Peyer were very visible in the last half of the intestine, from their white colour, which contrasts strongly with the adjacent parts, these glands are not sensibly thicker than usual. The *mesenteric glands*, were generally small except five or six, which were of the size of a kidney bean, and of a pink colour, but of good consistence. The *large intestine* was a little distended in its first half, where it contained a considerable quantity of reddish, turbid, but very fluid matter, afterwards assuming a still redder tint, until in the last fourth, where it was of a decided red. The mucous membrane was white in its first third, but shaded with red patches—the last five feet were of an amaranth red. It yielded strips of eight or ten inches, and was consequently of good consistence, except about the beginning of the transverse colon, where the strips were but six or eight lines, where the membrane is also a little thickened. The sub-mucous cellular tissue partakes of the same colour with the mucous membrane. The *liver* was of good size, and moist externally, much more easily penetrated by the finger than in the natural state;

the large lobe intensely red, and gorged with blood. The gall-bladder was distended, by a considerable quantity of grayish-green fluid. The *spleen* healthy, of usual size. The *kidneys* were of the natural size and colour. The *bladder* as large as an ordinary pear, the walls were in contact, and covered by a little yellowish white creamy matter, of the size of a hazelnut. *Uterus* small, containing no liquid, internally violet red. The *aorta* contained a tolerable quantity of blood, natural appearance. *Semilunar ganglion* grayish externally, and grayish and whitish internally. *Par vagum* white and healthy.

W. W. G.

CASE X. Salle St. Charles, No. 15. Service of M. Louis. Ducaigne, æt. 56, a workwoman, living Rue Traversine, twelfth arrondissement, entered ninth instant. Has been ill four days, preceding which she had cephalalgia at intervals. Onset of the malady by pain of the limbs; feeling of weakness forcing her to keep her bed; chills between the shoulders, followed by unnatural degree of heat, and accompanied by diarrhœa and slight colic. The diarrhœa has been constant; dejections of a matter of a yellow colour, clear, liquid like water; the number of evacuations at least twenty in the twenty-four hours; vomiting commenced on the second day, patient attributes it to drinking an infusion which was administered to her; quantity vomited always greatly exceeded that of the liquid which she drank; the matter of ejections a black fluid of a bitter taste; the colics became much more painful on the second day, and still continue; slight perspiration during the second day; almost complete suppression of urine since same period; voice most changed on third day after debut, less since.

On the third day of sickness took a glass of bad wine, which was not vomited. Treatment on entrance, 9th June. Enema of infusion of flaxseed with ℞j. of laudanum; friction.

April 10th, 10½ A. M.—A little better than yesterday; face of ordinary temperature; lips of good colour; sight good; eyes of natural brilliancy; hearing good; no ringing in the ears; slight frontal cephalalgia; intellect unimpaired; temperature of surface natural; colour of skin of body universally good; forearm a little marbled with violet colour; no cramps; tongue a little moist, of ordinary temperature; desires cool and sweet drinks; some nausea; oppression at epigastrium augmented by pressure; experiences no other pain at that point; rest of abdomen slight, dull pain; gurgling of intestines; abdomen tympanitic; tongue almost dry immediately after drinking; has had some dejections attended with pain since yesterday; respiration

slightly costal, and quick; pulse sufficiently large, regular, 100; voice a little suppressed. Treatment,  $\frac{1}{4}$  lavement of linseed with  $\mathfrak{Dj}$ . laudanum twice; lemonade; fomentations, and sinapisms to inferior extremities.

*April 11th.*—Dying at 7 A. M.

*Autopsy, at 4 $\frac{1}{2}$  P. M.*—Skeleton well-formed; moderate embonpoint; internal part of left thigh livid; lividity, but less marked on the lateral parts of the body; not cold; still warm on trunk and thighs; colour of muscles natural.

*Cranium.*—Blood very abundant on the external face of the dura mater; traces of slight sub-arachnoid infiltration; brain of normal consistence, slightly injected; cortical substance of natural colour; corpora striata of natural colour;  $\frac{2}{3}$ ss. of limpid serosity in each lateral ventricle; pia mater a little injected; tuber annulare slightly softened, healthy in other respects; cerebellum natural.

*Semilunar ganglion* thin and grayish; *par vagum* of natural, white colour and thickness, offering, however, in some parts a ramification of bluish vessels; *superior cervical ganglion* grayish, of natural form and volume.

*Thorax.*—Two drachms of serosity in the pericardium; heart of good size, containing a quantity of liquid blood, in which float imperfect and very small coagula. *Lungs.* Left lung adherent in whole extent by close cellular adhesions; it is soft, red internally, without evident alteration; right lung free every where; upper lobe emphysematous, very light, perfectly healthy in other respects, containing a little blood.

*Abdomen.*—Stomach of natural size, containing some kidney beans, and a considerable quantity of greenish, viscid mucus, without other liquid; (many crypts observed in œsophagus;) internal aspect of the stomach universally grayish, spotted with red, a little dark in some points; mucus very adherent to the membrane in a part of the anterior face: mucous-membrane very mammillated in the great cul-de-sac near the cardia, and evidently thicker than natural, yielding strips of two to four lines; no mammillation in other parts; mucous membrane of natural thickness and consistence upon the posterior face of the stomach near the cardia and the pylorus; near the small curvature is a slight, whitish, and opaque projection near an inch long, around which the adjacent portions of the membrane is radiated; the membrane covering this projection is thinner and more adherent than elsewhere—the elevation is caused by the thickening of the subjacent cellular tissue. *Small intestines* externally more or less gray in first half, red or livid in five or six last feet; a little

more voluminous than natural after commencement of the jejunum, containing in the first three-fourths a quantity of yellowish-green mucus; reddish mucus in the fourth, fifth, and in the last three feet a chocolate-coloured matter; internal aspect of the intestine in general that of the matter with which it is in contact; slight *arborization* of the mucous membrane in jejunum; in the middle portion of the ileum is observed a livid redness, which afterwards completely disappears, and is replaced in the last eighteen inches by a blackish-gray tint, which is unequal in colour; thickness of mucous membrane everywhere good; strips of three to five lines in first four-fifths rarely less or more; in last eighteen inches larger or smaller; *crypts of Brunner* numerous, and a little larger than millet seed in last eighteen inches; plates of Peyer universally healthy. *Large intestines* at least doubled in size; externally, colour of bluish-gray, containing a large quantity of gas; a liquid of a dark chocolate colour abundant in quantity in its whole extent; in this liquid was found a lumbricus of eight or ten inches in length; grayish flocculi like dregs of wine float in it; they offer no resistance to pressure, and are extremely soft; mucous membrane of cæcum of dark, livid red, unequally diffused; similar but less interrupted in ascending colon; in three-fourths of the first part of transverse colon colour natural; afterwards violet-red like that of the cæcum; in descending colon, and in a small part of the sigmoid flexure, and in the rectum, redness diminished—it is analogous to that of the subjacent cellular tissue, which is ecchymosed or infiltrated with blood in the reddest part; in texture the membrane is softened, muciform in cæcum; strips of two or three lines obtained—in colon of eight—in transverse colon, where colour is natural, ten to twelve—two to eight where colour is violet—one to two in the brownish parts of the rest of the colon; moderate consistence in the other parts. *Liver* of good size and healthy. *Gall-bladder* contains a tolerable quantity of very dark-green fluid. *Kidneys* of good size, a little pale in the cortical substance, in other respects healthy. *Spleen* scarcely larger than natural; reddish-black at lower extremity; suitable consistence in the whole extent.

C. W. P.

CASE XI. Salle St. Paul, No. 17. Service of M. Louis. Dezot, æt. 62, living in the eleventh arrondissement, shoemaker, entered 15th, at noon; at 6 P. M. I saw the patient, and collected some particulars of his case; he was cold, much prostrated, livid, pulse insensible on left side, and upwards of one hundred on the right, but extremely feeble and difficult to count with accuracy. Respiration was thirty-eight, very costal; he was then vomiting a large quantity of a

transparent liquid, mixed with mucous flocculi; since his entrance he had vomited basins full; he was excessively prostrated, and the answers obtained could not be perfectly depended upon; still he seemed to refer the commencement of his disease to the day but one preceding his entrance. Visit of M. Louis, 16th, at 8 A. M. Patient states that he has had "a cold" since January, attended by emaciation. He has lived during the winter in a damp closet in the seventh story, immediately under the roof, and at times has absolutely wanted food. On the first day of his disease he had eight or ten watery discharges, with borborygmi, but without colics. Vomiting did not occur until the morning of the 15th, while upon the litter on his way to the hospital; it had however been preceded by nausea which was not caused by the drinks which he took. Cramps more violent in the inferior than the upper extremities, come on at the same time with the vomiting and have been repeated since his admission. The thirst has been intense, and the urine suppressed from the commencement of the disease. He has suffered from the sensation of cold during the whole disease, and on his entrance last evening, his face was cool and his nose cold to the touch. The respiration has never been impeded. Before his entrance he took no active medicine, and confined even his domestic remedy to sugared water. Since his admission he has taken a potion consisting of alcohol and laudanum much diluted, without vomiting; has had five or six stools since his entrance, but no perspiration.

Present state, April 16th, 8 A. M. The expressions of his face denotes fatigue; the eyes are moderately hollow but of their natural appearance; the cheeks are cold, the nose still colder, but the limbs and body of the natural temperature; perhaps a little lividity of the face; lips are violet; folds made in the skin of the neck are slowly effaced, and the same phenomenon was observed in that of the upper part of the chest, but in a less degree; sight was unimpaired until to-day, but now he sees surrounding objects as if through a blue medium; ringing in the left ear, which has existed for several days; intelligence perfect; voice feeble, but less shrill than yesterday; pulse eighty, feeble, regular, and less sensible on the left than the right side; respiration twenty-eight, high but equal; tongue cool, whitish at the sides, of natural colour at the centre, but dry; thirst, but desires tepid drinks; abdomen retracted; epigastrium sensible to pressure, and constantly painful; the sensation being compared to that of oppression, on inspiration; a similar pain but still more severe existed in the lower part of each side of the chest; five or six dejections since entrance; urine suppressed. Lemonade; injection of flaxseed;



potion consisting of  $\bar{z}$ j. alcohol,  $\bar{z}$ j. of syrup, and  $\bar{z}$ vj. of vehicle— $\bar{z}$ ss. every hour.

4 P. M. Cheeks a little cooler than in the morning; drowsiness constant but easily dissipated; sight troubled, but no blueness of objects; hands livid blue; feels more feeble; voice more disguised than this morning; pulse still very feeble, eighty-eight; respiration costal, twenty-eight; tongue dry and cracked, but not coated; epigastrium less sensible to pressure; no nausea, vomiting, cramps or stools; urine passed several times, and involuntarily. Continue prescriptions with frictions to limbs.

17th, 8 P. M.—The frictions were used as ordered with a brush, until he was warmed, and complained of their force. His face is now cold and livid, but less than the forearm; speechless, or uttering inarticulate whispers; no pulse; respiration very frequent; great dyspnoea; temperature of the abdomen is natural; stupor, lying with his mouth half-open; a strong rattle has existed during the last three hours; he has not vomited nor suffered from cramps; several dejections. Sinapism to thighs—alcoholic potion. Death in the night.

*Autopsy, at 8½ A. M. 18th April.*—Skeleton well-formed and moderately large; moderate emaciation, but little cadaveric rigidity; inferior extremities, especially the knees, were bluish and livid; muscles of natural colour and firm.

*Cranium.*—A considerable quantity of blood was found in the external face of the dura mater; moderate sub-arachnoid infiltration, and injection of the pia mater; at least two and a half ounces of serosity were found in the right lateral ventricle, and nearly the same quantity in the left; the septum lucidum was ruptured at its posterior part, but not softened; the whole encephalon was of good consistence; the cortical substance was livid, pink, and much deeper in its colour than ordinary; the corpora striata presented an analogous appearance; the medullary substance was injected in a remarkable degree, and besides marked with light lilac streaks; some hydatiform cysts in the posterior part of the choroid plexus; a slight effusion of blood was found at the base of the brain, about one or two lines in thickness, and between the sphenoid bone and the occipital foramen, no coagulum visible; the veins of the ventricles were distended with blood; cerebellum like cerebrum, was marbled in its medullary substance; nothing remarkable in the rest of the brain. The examination of the cranium was made at 3½ P. M.

*Thorax.*—The *pericardium* was universally adherent to the heart by slight cellular connexions; externally it also adhered to the left lung; heart was of moderate size, a little flabby, of normal thick-

ness of parietes, containing a quantity of liquid blood with some coagula of irregular form, besides a yellowish, fibrinous coagulum of moderate size in each ventricle; the *pleura* of the *left side* was healthy, except some partial adhesions; the left lung was grayish-blue externally, the upper lobe was slightly emphysematous, and the lower a little heavier than natural, containing much blood without globules of air, but not splenitized nor hepatized; towards the base of the fossa, which separated the two lobes, was a very elastic tumour of the size of a hen's egg, formed by a rupture of the vesicles of that part; only a few filaments remained, sinking as soon as the tumour was opened; the base of the tumour formed by the lung offered some flattened blood-vessels of large size, half a line in diameter; one or two of them were from a line and a half to two lines, opaque, without valves, and terminating in the primary divisions of the pulmonary artery; no other lesion observed. *Right lung* partially adherent, heavier and more voluminous than the left; the inferior lobe was less elastic than that of the other side, granulated, and manifestly hepatized; the upper lobe was emphysematous upon its narrowest edge, but without projection of the vesicles, which are only increased to three or four times their normal size; in the summit of the lung there was an unequal, lobulated tumour, separated from the contiguous parts of the lung by a furrow of some depth; it was very elastic, as if formed by air, and semitransparent, but divided into lobular projections by little white lines, a third or a fourth of a line broad; upon cutting into the tumour it instantly sank, presenting at its base an appearance like that of the other lung, but without the vessels.

*Abdomen.*—The stomach was of small size, containing a moderate quantity of greenish-yellow mucus, tolerably adherent to the membrane, but without any watery fluid of any kind; the internal aspect of the stomach was grayish and reddish, uniformly diffused, except along the small curvature and in the great cul-de-sac, where the redness is very unequal, mixed with gray, and in spots. The membrane was mammillated along the large curvature within the three inches nearest the pylorus, and the same space adjoining the cardia; these portions were covered with a more tenacious mucus than the rest of the membrane; the thickness and consistence every where normal; and when the membrane was raised up it was evidently grayish, the reddish shade depending upon the injection of the sub-mucous cellular tissue. The small intestine was a little meteorized; its colour externally was grayish and reddish, but unequal, except in the last four feet, where it was green or bluish; it contained in its first half a yellowish-red mucus; in the second half, a turbid, very fluid and

abundant livid red liquid; the mucous membrane is similar in its general appearance to the exterior of the intestine; its thickness is normal; the strips yielded upon traction, are three to five lines long, except in the five last feet; in this latter the membrane itself is greenish, but in other parts it is white, or only a little injected, the colour depending upon the subjacent cellular tissue; this injection is most marked in the five last feet; glands of Peyer grayish, but scarcely visible; those of Brunner widely separated, found only in the five last feet, a little larger than a millet seed, near the valve they were rather numerous and a little larger.

*Large intestine* of ordinary size; contained a large quantity of a grayish-red liquid, not very fluid; the colour became deeper in approaching the rectum; the mucous membrane was of a grayish colour, at intervals slightly tinged with livid pink in its first third; grayish livid red in the eighteen or twenty inches which succeed, then grayish only, but afterwards grayish-red, except in the last two feet, which was brown, and exhaled a manifestly gangrenous odour; the last two feet were also marked with blackish-red spots of the average diameter of half a line, without manifest destruction of the membrane; the thickness in the first third of the mucous coat was a little increased, where it yielded strips of only one to three lines, and was slightly injected in its thickness in some points; after the first third it was thin, but less adherent to the subjacent tissue than usual, and the strips were at intervals longer or shorter without reference to the colour of the membrane; the sub-mucous cellular tissue was incomparably more injected than the mucous coat; no crypts were visible. The *liver* was of the usual size, and offered in the upper part of the right lobe a yellowish, hard, encysted tumour, of the size of a hazlenut; the tumour looked like the matter found so often in the aorta of old persons, having the same semi-crystalline appearance; some grayish-yellow spots in the upper part of the middle portion, which did not project beyond the surface of the liver, but penetrated into its tissue for the depth of five or seven lines, and were then lost in it without offering any difference of structure or consistence; the liver was of deeper colour than usual; its substance was finely granulated; the gall-bladder was distended by a large quantity of greenish-black fluid, which was moderately viscous; the spleen was of good colour and ordinary size, a little softer than natural; the *kidneys* were healthy and rather pale; the bladder was of the size of a small pear, containing a turbid, whitish fluid; the mucous membrane of natural thickness, but yielded strips a little shorter than usual; par vagum white, of

usual size; the *superior cervical ganglion* was whitish or gray, small and firm; the middle ganglion also small; semilunar ganglion was of moderate size, gray, in parts slightly tinged with pink, both externally and internally; the mesenteric glands were small, except in those corresponding to the last five feet of the intestine where they were larger and livid red.

This case and the three following present the complication of pneumonia, which frequently occurred towards the termination of the disease.

W. W. G.

CASE XII. Salle St. Paul.—Orsin Edmonds, æt. 52, pedler, living Quai et Isle St. Louis, admitted April 12th. His habits are temperate; general health good; his alimentation good, and has always used a certain quantity of wine at dinner. On the 9th of April, diarrhœa with constant gurgling in the intestines, with anorexia, and pain upon evacuation were manifested. At first the dejections were four or five in the twenty-four hours, but constantly increased in number. Yesterday, (April 11th,) at 5 P. M. sudden augmentation of the diarrhœa, attended with great feebleness, great thirst, cephalalgia, indistinct sight, and loss of voice. At 7 o'clock vomiting ensued, and an hour afterwards cramps came on, commencing in the feet and extending to the legs and thighs, and subsequently to the arms, but were much more intense in the lower extremities. Urine has been almost entirely suppressed since 5 P. M. At 5½ P. M. he was brought to hospital on a litter. Twenty-five leeches have been applied to the epigastrium, which have detracted a good quantity of blood.

April 12th, 10 A. M.—Present state. Face, even the central parts of it, of a natural temperature; countenance elongated; eyes a little sunken in the orbits; sight confused; hearing good; aphonia almost constant; (it momentarily disappears when the patient makes great exertion to speak;) suffers less from cramps since he has been rubbed and warmed by hot linen applied to the chest and abdomen; heat of the body natural in the upper and lower extremities; folds of the skin, (made by raising the skin between two fingers,) disappear very slowly as on the dead subject—(this is a constant symptom in true cholera;) skin is not livid; tongue somewhat moist, whitish, of a slight violet at the edges; intense thirst, desires cold and acidulated drinks, no nausea after drinking; breath cool; no pain in the epigastrium since application of the leeches, but previously the patient had experienced a slight lancinating pain; no stools the last two hours; the last which has been observed by us was a liquid, the general appear-

ance of which resembled that of clear, thin rice porridge or soup, with flocculi like the swollen rice; experiences slight colics upon going to stool; urine suppressed; no borborygmia; oppression since last night; pain in the right and left side during inspiration; pulse very weak, threadlike, difficult to count, 120; respiration twenty-four, somewhat costal; the patient feels very weak, and inclined to sleep; intellectual faculties perfect. Prescription—Lemonade,  $\frac{1}{4}$  enema of linseed decoction, with  $\text{℥ss.}$  of laudanum (Sydenham's) every two hours, with frictions every two hours.

4 P. M. Patient feels better; suffers less on the sides of the chest; no vomiting nor head-ache; pulse 112, more developed than in the morning; respiration rather frequent; hands are warm; face is cold, without being very blue; no sensation either of heat or cold in the face; aphonia and suppression of urine persist with stupor. Prescription—Sinapism to the lower extremities.

*April 13th, 9½ A. M.*—Natural heat of the body and extremities; temperature of the face natural except the nose, which is cold; less pain of the chest; aphonia diminished; sight good; some nausea without vomiting; respiration easy; three evacuations without urine during the night. Prescription—Lemonade,  $2\frac{1}{2}$  enema of linseed decoction; emollient cataplasm on the pit of the stomach; friction of the lower extremities every two hours.

5½ P. M. Face cold, particularly the nose; countenance without expression; lower extremities pretty warm; folds of skin disappear slowly; almost complete aphonia; hearing and sight good; no head-ache; no vomiting; gurgling of intestines easily determined by pressure of the abdomen; three dejections during the day; slight coma almost constant. Sinapisms to lower extremities; frictions every hour.

*April 14th.* Morning visit. Expression of countenance same as yesterday; upper extremities cold, but not changed in colour; integuments of the thorax of livid colour and violet; no sense of pain anywhere, except in the abdomen upon pressure, which immediately produces borborygmus; tongue very moist, yellow and cold; no thirst, obliged to force him to drink; no vomiting or stools; no urine. Prescription—Tea as drink, composed of infus. of tilleul and orange-flower water,  $\text{℥iv.}$  alternately with alcohol,  $\text{℥ss.}$  administered in table-spoonful dose every half hour.

Death at 3 P. M.

*Autopsy, eighteen hours afterwards.*—The frame is well-formed; the face and the lower extremities of an unequal, (marbled,) violet colour; the subject is not very fat; cadaverous rigidity not very re-

markable; body quite cold; muscles of normal consistence and colour.

*Cranium.*—Considerable sub-arachnoid infiltration of a red serum; pia mater injected; substance of brain also injected, and remarkably soft; cerebellum pale externally, medullary matter of violet colour;  $\frac{7}{8}$ ss. of serum in each lateral ventricle.

*Pneumogastric nerves* sound in regard to thickness; presented some violet spots on exterior surface, which did not exist internally. *Superior cervical ganglia* of middle size, gray, very dense. The *semilunar ganglia* grayish in their entire substance, thin, and very firm.

*Thorax.*—The pericardium, viscous exteriorly, very moist internally, but without serum; heart full of a large quantity of blood in part coagulated; the blood of the right auricle forming an enormous black clot; heart a little larger than ordinary, due to a slight hypertrophy of the left ventricle, the parietes of which are very firm. *Lungs.* The left lung adhered in a part of its extremity—its upper lobe light, and of a vivid red, but sound; the inferior lobe heavy, of a deep red, containing a small quantity of blood; its texture is not granulated as in pneumonia, but as if splenified; on the right side less adhesions than on the left; upper and lower lobe equally heavy; the upper hardened and granulated, hepatized, black in part of its extent; the lower of the same colour, not granulated, but splenified; both lobes offer a small quantity of blood mixed with air.

*Abdomen.*—Stomach of the middle size, containing a moderate quantity of a limpid, green liquid, in which are flocculi of mucus of the same colour, whilst others adhere in a slight degree to the corresponding mucous membrane. The mucous membrane presented some red spots here and there in all its extent, more along the small curvature than in any other part, offering an imperfect mammillated appearance. In the vicinity of the pylorus, it is more or less injected in all its substance; it is of normal thickness and consistence in all its extent, with the exception of the great tuberosity near the cardia, where it is somewhat thicker than natural, and presents the mammillation pretty well characterized.

The small intestine gray and red externally, containing a yellowish, thick mucus, abundant in the first half; the mucous membrane is more or less injected in all its extent, particularly in the three first feet of the ileum, much less afterwards; it is of natural thickness in all its extent, giving strips of six or seven lines in length in every part except in the four or five last feet; in the parts where it is less injected the strips are from two to four lines, and in the parts where

it presents nothing remarkable the strips have less extent; Brunner's follicles less in size than a grain of millet, are numerous in the four last feet of the intestine, increasing in number and volume as we approach the lower extremity near the cœcum; Peyer's glands are scarcely visible; mesenteric glands are of a small volume generally, except two or three near the jejunum and liver, which are of the size of a kidney bean.

The large intestine of a natural volume, containing a small quantity of a white liquid, slightly grayish, in which are suspended some mucous flocculi; the mucous membrane is grayish in all its extent, interspersed with spots, some of a livid rose colour, others very red, particularly in the ascending colon and rectum; some follicles with a central point in the entire extent of the intestine, and are placed ordinarily near each other; the mucous membrane throughout of natural colour and consistence, except in cœcum and in the beginning of the colon, when the strips are not more than one or two lines in length. In the rectum are three green spots separated from the rest of the membrane by a narrow furrow; the parts near this furrow are of an intense red; the membrane is a little thicker than in the neighbouring parts; it is green in its entire substance, and has a gangrenous odour.

The *liver* moist externally, of normal size and consistence; redder than in the natural state and containing an unusual quantity of blood; the gall-bladder distended by a great quantity of bile, of a blackish-green colour. *Spleen* large, but sound. *Kidneys* of a livid colour, but of natural consistence and volume. *Bladder* contracted; contains a small quantity of thick urine; the mucous membrane sound.

CASE XIII.—Salle St. Paul, No. 17. Service of M. Louis. Galopin Pierre, aged sixty-nine, cooper; Barrière of Fontainebleau, No. 4, 12th arrondissement; widower. Entered 19th of April, 9½ o'clock A. M. Previously to the 14th, he was in perfect health, he was then taken ill, but became much worse on the 19th, at 3 A. M.

He passed the winter in a sort of vault, six feet deep, sleeping upon straw; lately he has lodged in a garret, but with a sleeping place of the same materials. His food has been scanty, he has passed whole days without eating, but at times he has committed excesses. On the 14th he was taken with diarrhœa, which has persisted with a little diminution, in the first twenty-four hours about fifteen evacuations; he had no colics, but much borborygmus. The appetite slightly diminished from the commencement. At three this morning, commencement of cephalalgia, he was seized at the same time with very



painful cramps, which commenced in the lower extremities, and then attacked the upper, but less severely, and simultaneously with vomiting, at first of a bitter matter, but afterwards of an insipid liquid. The thirst became very intense, but it had existed since the 14th; the urine also was still abundant. Feebleness of the voice occurred for the first time—a feeling of oppression which came on then, has since diminished. Chilliness was perceived for the first time, during the night. No sleep.

19th, 11 A. M.—Eight hours after the commencement of the grave symptoms. Expression of face natural, excepting an air of stupor; the lips are blue, and the rest of the face slightly livid. The nose is cool, cheeks a little warmer; the neck is of good temperature; the folds of the skin are there slowly effaced, on the chest they quickly disappear, but on the arms very slowly—forearms a little cool. The right eye, which is the only one remaining, is not evidently excavated. Frontal cephalalgia. Sight troubled at present, last night surrounding objects seemed bluish; hearing good. Voice extremely feeble. Yawns continually, but does not appear anxious. Pulse 72, small, feeble, and occasionally irregular. Respiration 18, moderately costal; air expired warm. Tongue tolerably moist, of good temperature, and whitish. Thirst intense, he prefers sour drinks of the temperature of the air; drank some lemonade before us with pleasure, and without nausea. Vomited soon after his entrance a reddish liquid, at the bottom of which were some mucous flocculi, of similar, but deeper colour; the redness was owing to a little pure wine, which he had taken before leaving his house, the wine caused no nausea, or other immediate uneasiness. No alvine discharge, and no urine since his entrance. Severe and frequent cramps in the feet exciting contortions of the face from their pain. No oppression or pain in the epigastrium, or in any part of the abdomen, but after taking the lemonade, he complained of a cramp confined to a small part of the epigastrium, and apparently muscular. Ordered frictions every two hours—sinapisms to inferior extremities. Iced lemonade. One-fourth enema of flaxseed, with  $\mathfrak{zj}$ . tr. opii, every two hours.

5 P. M. Complains bitterly of the pain caused by the application of sinapisms to his thighs for half an hour, they were removed just before the visit; in continual agitation. The sinapisms were each twenty-four square inches in extent, and have reddened the skin; however, in the midst of his pain he is gay, and jests with the nurse. Vomited twice since the morning, the first fluid was still reddish, the second yellowish-red, was abundant, and contained much light mucus in suspension. Two dejections, not copious, and consisting

of a gray liquid, slightly tinged with green, containing much mucus in small flocculi, but much smaller than those in the matter vomited. No urine. Cramps increased, both in the upper and lower extremities, in spite of the frictions which were repeated two or three times. Hands are cool; face same state as in morning; temperature of trunk natural. Pulse very small, 80, regular. Respiration frequent, and proportioned to the anxiety of the patient. Tongue whitish and cool; intense thirst; no nausea after drinking. Some *twisting* pain near the umbilicus since the application of the sinapisms.

Continue frictions. Cataplasm to the thighs if pain continue.

20th, 8 A. M.—Soon after the visit of last evening, the pain from the sinapisms became tolerable, but it has not yet entirely ceased, and the skin is red, hard, and elevated in that part. He has not vomited. The dejections were numerous, but small, so that in the whole they fill one-fourth of a basin, they are liquid, greenish-yellow, and at the bottom are some mucus and yellow fragments like *fæcal* matter. Urine passed, but not abundant, no heat in voiding it. Abdomen retracted without pain. No cramps. Respiration 16, a little costal. Pulse 80, regular, without particular characters. Nose rather cool, less so than yesterday; temperature of rest of the body natural. Less anxiety, some disposition to sleep. Little cephalalgia; hearing good; folds in the skin of the neck slowly effaced. Ordered Seltzer water iced, sol. syr. gum.;—half enema of flaxseed, twice. Diet.

4 P. M. No nausea, vomiting, or cramps. No urine. Two stools of yellowish liquid, containing many mucous flocculi. Much prostration. Temperature of the face natural, except the nose, which is cool; rest of the body natural. Attitude relaxed. Thighs at least as red as last evening; the traces of the pressure of a finger remain visible for some time, from their paleness and depression. Pulse 80, rather small and weak. Respiration 22, rather costal. No pain at the epigastrium, but a little at the umbilicus on pressure, no *borborygmus*. Ordered antispasmodic potion,  $\mathfrak{z}\text{v}$ . with  $\mathfrak{z}\text{ij}$ . alcohol, and  $\mathfrak{z}\text{ij}$ . of syrup of orange peel.

21st, 8 A. M.—Stupor almost constant, dullness of intellect, without delirium. Temperature of surface in general a little higher than natural, except the left cheek and nose, which are cool. Skin inflamed by sinapisms, is still sensible, and harder than the neighbouring parts. The folds of the skin of the neck are very slowly effaced. Voice not extremely weak; severe feeling of oppression at the epigastrium only. Pulse 84, regular, full. Respiration 22, elevated. Tongue white at the edges, yellowish at centre. Thirst; anorexia;

no cephalalgia, cramps, or vomiting; constipation. Urine suppressed. Ordered, sol. syr. gum. iced, two pots. Antispasmodic potion with  $\mathfrak{z}$ j. syrup of white poppies, and eight drops of ether,  $\mathfrak{z}$ ss. every half hour—one-fourth ration of broth diluted, three times.

Dead  $3\frac{1}{4}$  P. M.

*Autopsy, sixteen hours and a half after death. April 22d.*—Frame large, well-formed; moderate embonpoint; some lividity in the internal part of thighs. The skin, where the sinapisms were applied, is thickened. Cadaveric rigidity considerable. Complete coldness. Muscles of good colour, and perfectly healthy.

*Cranium.*—External face of the dura mater covered by a large quantity of blood. The arachnoid was very moist; opaque nearly in its whole extent, with universal and very considerable infiltration beneath it. Pia mater very moderately injected. Brain very moist, tolerably injected and firm. The cortical substance paler than natural; corpora striata of normal colour. At least  $\mathfrak{z}$ iss. serosity in each ventricle. Cerebellum, medulla oblongata, and annular protuberance without appreciable lesion. Spinal marrow of normal size and consistence in its whole length; the neurilema a little injected. The nerves arising from it offered nothing unusual, except a slight injection of their neurilema. Cauda equina healthy.

Larynx healthy. The œsophagus presented many crypts, especially inferiorly; the mucous membrane was every where firm, and covered by its epithelium.

*Thorax.*—The pleura of left side contains  $\mathfrak{z}$ ijss. of serosity. The inferior lobe of the left lung is heavy, firm, of a reddish-brown interiorly, light brown externally, adhering to the pleura in its whole extent; the superior lobe is light, not engorged with blood, but containing at its lower portion a great quantity of spurious blood. The inferior and middle lobes of the right lung are manifestly hepatized; the upper lobe natural. *Heart*, is much enlarged; contains a great quantity of blood, with reddish coagula in pulmonary arteries and veins. Parietal of the left ventricle, generally eight lines thick, in some places even an inch, the ventricula septum is unusually thickened; the muscular substance is very firm. The right ventricle has its walls of the normal thickness. *Abdomen.* Stomach of a large size, nearly doubled, containing a pint of a tolerably thick, yellow liquid mingled with mucus; a small quantity of mucus adheres to the great curvature at three inches from the pylorus; the exterior face of the stomach is of a moderately deep livid pink colour; the internal face in the middle two-fifths of its anterior part is similar in colour to the exterior; in the anterior superior part of the great tuberosity

the pink colour becomes much lighter; in this portion of the stomach are observed many white points either elongated or circular, the largest of which is not more than half a line in diameter, and none offers any perceptible prominence. In those portions where the pink colour is observed, the mucous membrane is evidently mammillated. Besides this coloration, red spots much more deeply coloured are seen in the whole extent of the small curvature, particularly at its superior part; these spots are sometimes confluent; the space which they cover is a breadth of two or three inches; below they are more rare, and occupy a much less extent; the mucous membrane is of the normal thickness, notwithstanding the great dilation of the organ, giving strips of two to three lines in the great tuberosity; four to eight in the great curvature, and from ten to twelve in the small.

*Small intestine* more or less tympanitic throughout its extent; colour externally universally reddish, and contains in its two first feet a tolerably large quantity of a yellow liquid, which is not very fluid; the liquid subsequently increases in quantity, and contains a large amount of yellow mucus; evacuating the intestine of its fluid contents a large quantity of mucus adheres to the membrane; the internal face of the intestine is paler than the exterior; the mucous membrane is occasionally injected with very fine ramifications, whilst the subjacent cellular tissue is universally so, though the colour is not so deeply red; where the tympanitic expansion exists the mucous membrane is a little thicker than in the normal state, and gives strips by traction of two to five lines, (friable) in all its extent, except in the last two feet, where the colour is of a green tint, and the strips are eight to ten lines long. Glands and crypts of Brunner observed in the last five feet of the ileum, increasing in size as we approach the cœcum, where they are of the size of a grain of millet, and distant from each other a line or less. Peyer's glands are not very apparent, of a reddish-gray colour, of a thickness greater than natural, but which is more sensible to the touch than to the sight. Mesenteric glands generally of a larger size than usual, being that of a kidney bean, and having ordinarily a violet-red colour—others are of a fawn colour.

*Large intestine* of medium size, containing a yellow matter, moderately fluid, and of a fæcal odour. The internal face of the cœcum and half of the ascending colon offer a grayish colour sprinkled with red spots varying in intensity, which are smaller but more numerous in the cœcum than in the first half of ascending colon; the other half of ascending colon and the transverse portion is generally of a light pink, afterwards the colour is a grayish-white; mucous membrane

of the cæcum and colon give strips of only two to three lines in length. *Liver* of good size, firm, coherent, externally and internally somewhat pale; this paleness is apparently greater, owing to the prevalence of pale gray spots. Gall-bladder filled with a yellow, turbid liquid.

*Spleen* rather over medium size, healthy. *Bladder* contracted to size of a moderate-sized pear, (bell-pear;) parietes have a thickness of three or four lines, slightly consistent, and contains a small quantity of thick, white liquid.

*Aorta* contains a great quantity of liquid blood; superior vena cava considerably distended with blood, thirteen lines, (English,) towards its upper part.

Semilunar ganglion slightly gray in its extent, and of a medium volume; the thoracic ganglion concurring in its formation, white and healthy; some venous ramifications are developed in all the branches of the par vagum of right side, otherwise it is healthy.

The upper and middle cervical ganglia of right side are elongated, fusiform, running into each other so as to present the appearance of but one ganglion of about three inches and three-quarters in length, and from one and a quarter to one and a half inches broad. Ganglia of left side of neck have their normal appearance. Phrenic nerve perfectly sound.

CASE XIV.—Salle St. Charles, No. 9. Service of M. Louis. Balouvière, æt. 39, a seamstress, living in the Rue Mouffetard, unmarried. Entered April 18th, at 10½ A. M. Taken ill on the 17th, at 3 P. M. She had felt slightly unwell for a week previously, but only ceased working on the 17th. Food was frequently insufficient during the winter, and usually consisted of potatoes without meat or wine. Her room is dry but not warmed by a fire. For the last six weeks her food has been a little better than usual. During the week preceding her illness, her appetite had diminished; she had pain in the limbs, but no nausea, vomiting, nor diarrhœa. Within the last three days only she has felt some borborygmus, and during the epidemic nursed no patient, although she has seen a number. The disease began with *severe* diarrhœa, accompanied by frequent colics, which were most painful around the umbilicus; these pains invariably preceded the discharges; the dejections were *always* more or less yellow. Vomiting came on four hours after the diarrhœa, and was repeated eight or ten times; the matter was bitter, but white, without any shade of green. The cramps appeared with the diarrhœa, before the vomiting; at first only in the legs, but on the second day existing

both in the arms and legs, and much more painful than the colics, exciting loud cries. Urine suppressed since the commencement. Sight never impaired. Some tinnitus aurium. No chill at the beginning.

19th, 10½ *A. M.* Forty-three hours since the attack. The cramps were diminished by the application of sinapisms to the legs. She has vomited five or six times a matter composed of her drinks without peculiar taste. Two injections with laudanum were given which have been followed by no stool. At present there is a universal air of anxiety; the face is pale without lividity; the cheeks and nose were cool, the rest of the face of normal temperature; hands and forearms cool, and constantly uncovered by the patient; inferior extremities of normal temperature; she complains of no sensation of heat nor cold, but uncovers her chest and arms to relieve her oppression; eyes deeply sunken; sight perfect; hearing good; no tinnitus aurium at present; intelligence developed, and narration correct; aphonia, as from the beginning of the disease; respiration thirty-six, rather costal; pulse one hundred, very feeble and filiform, but easily counted; intense cephalalgia, but less than yesterday; frequent sighing and complains of feebleness; the folds in the skin of the neck are slowly effaced; sensation of oppression along the sternum and at the epigastrium, and at the latter a pain compared to a sort of pinching; tongue a little cool, moist, bluish, whitish in the centre; thirst, desiring cold and sour drinks, but rejecting them by vomiting soon afterwards; no colics nor dejections; urine suppressed. Seltzer water; sol. syrup. gummi; one-fourth injection of flaxseed, with ℞j. laudanum, twice. Cataplasm to abdomen.

4 P. M. Expression of face calm; coolness of the nose and left cheek only; arms and forearms of normal temperature, but hands a little warmer; aphonia; sight perfect; frequent hiccough; pulse one hundred, less feeble than in the morning; tongue less moist than usual, clear at the edges, but whitish in the centre; some sensation at the epigastrium, to which the cataplasm was not applied; vomited twice, but only the drinks she had taken; retained the only opiate injection she has taken half an hour, but no other discharges; no colics or cramps; suppression of urine. Sol. syr. gummi; Seltzer water; antispasmodic potion, with ℞j. syrup of white poppies, and ℞ss. orange-flower water.

20th, 7½ *A. M.* Since last evening one dejection with some urine; a little nausea and vomiting; no cramps; imperfect sleep; no perspiration; expression of face natural, without increase or diminution of temperature; upper extremities of natural warmth; pulse ninety-six,

small and feeble, but regular; tongue tolerably moist, clean, and neither livid nor red on the sides; thirst, with desire for cold and sour drinks; a little uneasiness at the epigastrium, compared to a sensation of weakness and without heat, but no pain upon pressure in any part of the abdomen. Sol. syr. gummi; iced Seltzer water; antispasmodic potion, with  $\overline{\text{ss}}$ j. syrup of poppies, and gtt. iv. sulphuric ether; injection of flaxseed.

4. P. M. Ate an orange, swallowing the pulp about two hours ago; felt oppression at the epigastrium immediately afterwards, and vomited five or six times a transparent fluid mixed with the orange; before eating it one or two vomitings, but generally she felt much better and now regrets her imprudence; the potion was taken for the first time immediately after eating, without appreciable effect; at present, the feeling of weight at the epigastrium persists; a little hiccough, was dissipated by the vomiting; face warm, a little flushed, with expression of anxiety; heat of the rest of the body natural; cephalalgia; numbness in the hands, but no cramp; respiration twelve, high and interrupted by sighs; tongue moist, warm, white only at the centre; no urine, and but one dejection. Injection of flaxseed, continue potion.

21st, 7 $\frac{1}{2}$  A. M. After the visit of last evening, vomited twice portions of the orange, and afterwards a green fluid with thick mucus at the bottom; slept at intervals during the night; no hiccough until this morning, when it returned with less violence; no dejections or urine; a little subsultus tendinum in the right arm only; no cramps; face calm and natural, but the left cheek and nose are still a little cool; a little frontal cephalalgia; intelligence obtuse; pulse ninety-two, regular but small, and counted with difficulty; tongue moist, but yellow, and coated at the centre to a more considerable extent; a little appetite, asking for broth; no nausea; no pain at the epigastrium. Sol. syr. gumm.—potion to be continued.

4 P. M. Stupor, sometimes but not always interrupted by applying the hand upon the patient; cheeks livid rose colour, and like the whole surface warm; folds of the skin effaced less slowly than during any previous visit; eyes remain half-closed; lying on the back, muscles relaxed, with general air of prostration; slight frontal cephalalgia; answers slowly to questions, but smiled when suspected of deafness; stupor returns immediately after replying; frontal cephalalgia; pulse ninety-two, characters same as in the morning; respiration fourteen, costal but regular; voice changed and slightly nasal, as in certain cerebral diseases; tongue less moist than usual; no pain in the epigastrium but uneasiness, as if from muscular fatigue, similar to those she



feels in her limbs, and in the abdomen; some tympanitis; pressure she assures us diminishes the pain in the abdomen; no information could be obtained as to her other symptoms. Fifteen leeches to the neck immediately; sinapisms to extremities; injection of flaxseed twice.

22d, 8 A. M. Extremely prostrated, moribund. Death at 2 P. M.

*Autopsy*, 23d April, 9 A. M. nineteen hours after death.—Skeleton well-formed, of middle size; very moderate embonpoint, lividity of the internal part of the thighs. Body perfectly cold, and rigidity of the muscles very great.

*Cranium*.—The external surface of the dura mater was covered by numerous drops of blood. A few drops of serum, only beneath the arachnoid. The pia mater was particularly injected in the sulci only. The cortical substance of the surface was paler than natural, that of the corpora striata was perfectly normal. The medullary portion was a little more injected than usual, and universally tinged with a delicate shade of lilac, but less deeply at the base than the summit; in a few small spots the colour was nearly natural. The consistence of the cerebrum was very good. Two ounces of serosity were found in each ventricle, a little less in the left than in the right. The cerebellum, annular protuberance and medulla oblongata were perfectly normal in appearance.

*Spinal marrow*, an ounce of serosity was found at the inferior part. The colour and consistence not apparently altered. The nerves arising from it presented nothing but some red lines externally, the result of the same slight vascular injection which existed on the neurilemma of the medulla spinalis. The sciatic nerves were traced, but nothing was observed except the injection of their tunic. The phrenic and pneumogastric were traced through their principal subdivisions, but nothing observed. The semilunar ganglion was small, violet externally, and pale internally, very firm, and cut with some difficulty. The superior cervical ganglion was of the ordinary size, grayish, paler internally than externally.

*Respiratory organs*.—*Epiglottis* and *larynx* normal. The upper part of the trachea was of yellowish-pink colour; the fleshy part covered with mucus, but the membrane of normal consistence.

The left *pleura* was healthy, excepting some partial adhesions at the inferior part of the lung. *Lungs*, the left was not heavy, the upper lobe bright red posteriorly from engorgement, the inferior lobe of a deeper red, with some points of manifest hepatization. The *right* lung was adherent in its whole extent, by bands of cellular substance which were readily broken; the upper lobe was lighter and less red than that of the left. The inferior lobe was slightly hepatized in some

points, and generally engorged, yielding upon cutting into it, an abundant red spumous liquid.

*Circulatory system.*—Heart was small, containing a moderate quantity of blood, with large and firm coagula. Pericardium perfectly healthy.

*Digestive system.*—*Œsophagus* healthy, *stomach* contracted superiorly, and without liquid, the parietes covered by a little grayish-green mucus. In the anterior and superior face of the pyloric half, the mucous membrane was thrown into a large number of grayish-red unequal folds—these folds are longitudinal, the membrane between them of the same colour, but not so deep. In the rest of the stomach a similar colour is disposed in longitudinal bands, a line or two large. The membrane is not mammillated, presenting the ordinary villi. The thickness and consistence are natural throughout, but the mucous membrane is every where injected in its substance. The sub-mucous tissue rather more injected than the membrane.

*Small intestine* a little tympanitic, externally grayish with scattered vascular ramifications. In the first three feet, there was only a greenish mucus, afterwards a more fluid matter of the same colour but only mixed with mucus; the colour of the mucus became reddish in the ileum. The colour of the membrane was pale in general, but in some parts slightly rose, due in part to vascular ramifications in its thickness, but much more to the injection of the sub-mucous tissue. The thickness and consistence are every where normal. Only two crypts of Brunner were visible, these were in the three last feet, and scarcely larger than a grain of millet. The glands of Peyer were generally little developed and grayish, some dotted with blue. The mesenteric glands were very prominent, a little enlarged, but of good consistence, gray or violet.

The *large intestine* was distended by gas in its first half, and contained much fecal matter, greenish, more consistent in the rectum than in the upper, and with the characteristic odour, but not moulded into the usual form. The mucous membrane was grayish, or slightly tinged by the matter in contact with it, but without any injection. The membrane was thin, but not wanting in consistence. The subjacent tissue but little injected.

The *liver* was of the usual size, rather pale, flabby, finely granulated, and more easily penetrated than in the natural state. The *gall-bladder* was at least doubled in size, and contained a yellowish, clear liquid, mixed with a yellow glairy matter, which was detached with difficulty by washing. The internal membrane was of a deep livid red in about a third of its extent; yellowish-green in other parts;

the red portion was thicker than the rest, and presented larger areolæ, the membrane however is perfectly firm. The sub-cellular tissue is vividly injected. *Kidneys* of normal size, and deeper colour than usual, the calices and infundibula presented nothing remarkable. The bladder contained a transparent liquid, its membrane perfectly healthy. The uterus was enlarged, in consequence of the development of a fibrinous tumour in the posterior part of the neck, near the os tinæ, whose posterior edge is but a line in thickness, the orifice is open and the anterior edge a little thickened; the tumour is about two inches high, and twenty lines broad, opaque, white and shining.

This case is one of the most interesting instances of death, in the period of reaction. On the morning of the 20th, she was rather better than on the preceding days, but still suffering from uneasiness at the epigastrium; after eating the pulp of an orange, the vomiting was reproduced, the gastric uneasiness much greater; these symptoms are sufficiently explained by the deep injection of the mucous membrane of the stomach, but as the inflammation was recent, (less than two days,) and not violent, the thickness and consistence were unchanged. The diarrhœa had ceased some days before her death, and the intestines were found in a state of perfect integrity, with healthy fecal matter. The lesions of the nervous system consisted in the distention of the lateral ventricles, and the slight injection of the pia mater and medullary substance, with the peculiar lilac tint, which was not confined to the brain, but existed frequently in most of the organs; the unknown modification of the blood which causes it, may perhaps be one of the most important lesions in the disease. The inflammation of the lungs was not suspected during life, this complication was found extremely frequent in the secondary stages of cholera, but in the severer cases auscultation was rarely practiced from the extreme feebleness of the patient, in the milder, where treatment could be directed with this special view, it was detected by the usual exploration of the chest.

CASE XV. Salle St. Rosaire. Service of M. Andral. A woman named Viége, æt. 36, tailoress, living Rue Cloître, St. Bernardin, twelfth arrondissement, was admitted to-day at 8 A. M. She has been ill since the 9th, when she was taken with violent diarrhœa at 10 P. M. Vomiting succeeded almost immediately, and has continued. Cramps came on an hour after the diarrhœa, commencing in the calves of legs, extending to the hands, and returning at intervals. The vomiting consisted of a watery liquid.

*April 11th, 8 A. M.* Present state. Features immoveable; great prostration; eyes dull, sunken, and encircled by a dark line; face,

including lips, livid and cold; arms and feet cold; body warm; tongue pale and cool; thirst tolerably great; vomits, whether she drinks or not; pain in the whole abdomen, but particularly at the epigastrium; says she urinated last night? aphonia complete, requiring the greatest attention to hear her whisper; extreme prostration; pulse one hundred and twenty, very small, but easily felt; respiration costal, twenty-eight. R. Sinapism to abdomen, sprinkled with ol. terebinth.; frictions with liniment of cantharides.

*April 12th.* Intense colics; hands cold; no vomiting; some stools; tongue covered by false membrane. Death at 2 P. M.

*Autopsy, 13th, 8 A. M.*—Great cadaveric rigidity; moderate embonpoint; hands violet; muscles pale red.

*Cranium.*—Moderate injection of the veins of the dura mater; medullary substance of the brain moderately injected;  $\frac{3}{4}$  j. of serosity in left lateral ventricle; half that quantity in the right; pineal gland of the size of a large pea, containing some sandy matter; rest of the brain normal; semilunar ganglion and its dependences white and healthy; par vagum also normal; larynx and pharynx healthy.

*Thorax.*—Pericardium contained an ounce of reddish serosity; heart contained in the right auricle a large, soft coagulum, entirely colourless and infiltrated with serum; in the other cavities there was a small quantity of liquid blood; another coagulum of similar appearance was found in the left auricle and in the beginning of the aorta; the tissue of the heart was firm, pale red, and hypertrophied in the left ventricle; the aorta contained a black liquid blood, in the midst of which appear some small white coagula; internal surface of the aorta white; in the summit of the left lung were some tuberculous masses, surrounded by a pale, crepitating tissue; posterior part moderately engorged; the right lung contained some tubercles in the summit of its inferior lobe; its parenchyma as in the left lung.

*Abdomen.*—Vena portarum contained but little blood; inferior vena cava gorged with blood. *Stomach* contracted, containing a small quantity of greenish mucus, which covered the internal face of the mucous membrane; that membrane is white, slightly dotted with red points; in the anterior parts, the membrane is of good consistence; some scattered albuminous flocculi on the peritoneal tunic of the intestines; sub-cellular tissue considerably injected; three invaginations of small intestines, each an inch long; yellow mucus with a yellowish matter is found in the first part of the small intestine; in the two inferior thirds it is of a pale red, with white clots floating in it; still lower, these filamentous clots are alone, and

cover the intestine with a membraniform layer; in the beginning of the jejunum, a large number of the valvulæ conniventes are of a bright red, between them, the membrane is rose-coloured, towards the end, however, the membrane in the intervals is pale; in many parts it is lined by whitish, membraniform fragments; this matter adheres intimately to the imperfect valves which occur in the ileum; no appearance of Brunner's follicles or the glands of Peyer.

*Large intestine* contained a fluid of a fawn colour, in large quantity; internal surface of cæcum and ascending colon of a brownish-red tint; this redness continues, but is less intense in the transverse colon; it then disappears, but is reproduced in the most intense degree from the descending colon to the rectum; membrane is covered by a puriform mucus, it is very soft, and yields a most fetid odour. *Liver* red internally and externally, of good consistence; gall-bladder distended by a deep black bile. *Spleen* five inches long, two broad, and one and a half high; livid red internally, and very firm. *Kidneys* normal. *Bladder* contracted, empty; no white matter in its cavity; uterus healthy; left ovary dropsical, of the size of an orange; in the right ovary was found some effused blood.

CASE XVI. Hôpital de la Pitié. Salle St. Paul. Service of M. Louis. A boy named Verbois, aged fourteen, a slater, taken sick this morning, April 10th, was received at 4 P. M. His habits are temperate, and his alimentation has been sufficiently good. Yesterday being perfectly well, he worked as usual, and slept well through the night. Onset of the disease sudden at 7 o'clock this morning; after breakfast, consisting of some bread, meat, and a portion of absinthe, he experienced great nausea, followed by vomiting; this was repeated twice. The matter vomited, consisted of the food which he had taken. Diarrhœa ensued half an hour after vomiting; the dejections have been very numerous, he has not had either cramps or cephalalgia, or tingling in the ears: sight and hearing unaffected. Voice has been changed since the onset, and thirst has been intense during the day. Was chilly during the morning, but for the last two hours the chills have ceased.

5½ P. M. Present state. Face cool, forearm and legs cold. Colour of the face violet, with the prominent parts of the cheeks livid. Eyes natural. Abdomen, with exception of the epigastrium, soft and yielding; he suffers no pain, except a feeling of oppression across the middle of the chest, increasing upon inspiration. Tongue violet, hurried, clean—has some nausea, but no vomiting. Pulse is very

filiform and frequent. No cramps. Urine suppressed for some hours.

Treatment. Friction every half hour to extremities, especially lower limbs. Warm sinapism to legs and arms— $\frac{1}{4}$  enema of linseed mucilage, with  $\mathfrak{J}$ j. of laudanum every three hours, and R. Antispasmodic potion,  $\mathfrak{Z}$ iv.; alcohol,  $\mathfrak{Z}$ ss.; laudanum, (Sydenham,)  $\mathfrak{Z}$ ss. M. Take of this mixture  $\mathfrak{Z}$ ss. every three hours. Diet.

*April 11th, 8 $\frac{1}{2}$  A. M.*—Physiognomy natural, without lividity; heat of face natural, except the nose, which is cold. Voice very slightly altered. The heat of the surface of the body and limbs became equalized and reëstablished at 9 P. M. last night, after almost unremitted frictions for several hours. The antispasmodic potion was administered for the first time at 8 P. M. the first dose was vomited, the others were retained. The voice returned during the night; the vomiting and pain, or oppression of the chest ceased at 5 P. M. to-day. Urine is still suppressed. Diarrhœa is much diminished—momentary cramps in the hands, none in other parts. The extremities and whole body have a proper temperature. No pain in the abdomen or elsewhere; feels stronger. Expression of contentment and intelligence in the countenance; congratulates himself that his respiration is free and without pain. Pulse regular, small, (100.) Breath cool.

Treatment. Sol. syrup of gum.:  $\frac{1}{4}$  enema of decoction of flaxseed, with  $\mathfrak{J}$ j. of laudanum every four hours. Frictions every four hours. Diet.

5 P. M. Countenance, temperature, and colour same as in the morning. Respiration slow, 12 per minute. Pulse 96; volume increased. Disposition to sleep, which is sufficiently tranquil. Urine has reëppeared.

Continue the medication.

*April 12th, 10 A. M.*—Has slept well; face and body of natural colour. Body of good temperature; face cool; some nausea; two dejections since yesterday. Abdomen soft, no pain on pressure. Expression of countenance good. Tongue slightly coated with white fur. Pulse 73, rather tense. Respiration easy. Nausea.

Continue treatment.

5 P. M. Somnolency—has slept during the day; appearance of narcotism; has vomited soup which was given him by mistake. Face red and injected. Mind sluggish. Pulse 68.

Treatment. Ten leeches to the neck.

*April 13th, 9 A. M.*—Disposition to sleep continues. Face warm

and red. Pulse 104, tolerably full and strong. Tongue is natural except at the point which is slightly violet; no pain in the abdomen which is insensible to pressure. Has had three dejections since yesterday, of a yellowish-green colour, of a pungent metallic odour, and of the consistence of very thin "potage au purée."

Treatment. Infusion of coffee, (coffee,  $\bar{\text{z}}\text{j}$ . to water,  $\bar{\text{z}}\text{iv}$ .) taken in spoonful doses each half hour: eight leeches to each side of the neck.

5 P. M. Has taken four portions of coffee—vomited after the two first portions, but retained two last: has had six dejections. Drowsiness less than this morning; the leeches drew a large quantity of blood. Face cool, redness much less; no cephalalgia. Tongue natural. Has desire for food. Pulse 112, weak, regular. Expression of face good. Allowed a small portion of milk.

April 14th, 9 A. M.—Says he feels as yesterday. Vomited during this night and this morning a clear, green liquid, containing numerous narrow, long flocculi. Has had three dejections similar to those of yesterday. Pulse 108, feeble. Heat of body and extremities normal; tongue very moist, violet. Thirst intense.

Treatment. Lemonade,  $\frac{1}{2}$  enema of decoction of linseed; sinapism to inferior extremities.

April 15th.—Feels better; vomited last evening a light greenish matter; has had eight dejections since. No pain of abdomen. Pulse rather feeble, 84, and regular. Liquid of dejection similar to that vomited.

Treatment. Seltzer water, solution of syrup of gum. Vermicelli and broth.

6 P. M. Asleep.

16th. Still doing well, vomited but once yesterday. Ate two rations of vermicelli and one of broth, without unpleasant consequences. Slept well. Appetite good; tongue nearly natural, slightly red. Abdomen well-formed, without tenderness—has had but one stool for last twenty-four hours. Temperature of body good.

Ordered Seltzer water—sol. syrup of gum—half portion of rice, one egg, and a small quantity of bread.

From this time the convalescence was rapid, and in a few days he was discharged perfectly well.

CASE XVII. Salle St. Charles, No. 11. Service of M. Louis. Gignot Françoise, æt. 59, workwoman, living in the fifth arrondissement, married, entered 15th, at 11 A. M. She has had a continual cough for the last seven months, and three months since profuse hæmoptysis, (vomiting she terms it,) the blood was coagulated, and the



hæmorrhage twice renewed, and amounting each time to more than half a pint. Since the same date, she has expectorated much tenacious sputa, and has suffered from pains in the sides of the chest and between the shoulders. Frequent chills within the last three weeks.

On the 14th, at 2 P. M. she was taken with a chill and trembling, cramps in the legs which continued with nearly the same violence last night, at the same time violent diarrhœa and vomiting of a glairy matter mixed with bile. Cephalalgia and tinnitus aurium also at the beginning. She has kept her bed from the commencement of the attack. Intense thirst, but no coldness of the surface.

*April 16th, 8 $\frac{1}{2}$  A. M.*—Face a little violet upon the cheek-bones and nose. Face in general, but especially the nose, cool; hands cool. Folds of the skin are effaced as rapidly as in health. Pulse 92, rather small and regular. Tongue moist, natural temperature, a little coated at the centre. Thirst intense. Vomited twice since yesterday a glairy matter. Whole abdomen sensible, especially the epigastrium, which is even painful without pressure; the sensation is that of oppression mingled with lancinating pains, which extend to the back. Abdomen a little distended; frequent borborygmi, without discharges. Sputa greenish, not abundant. Percussion above and below the left clavicle; respiration frequent, at this moment cramps in the fingers and calves of the legs:  $\frac{1}{4}$  enema with 3ss. laudanum, twice. Antispasmodic potion, with gr. iss. acet. morph. Frictions to the legs.

*17th, 7 $\frac{1}{2}$  A. M.*—No nausea or vomiting, no cramps, except at intervals during the night, in the right arm. Urine. Folds of skin effaced with nearly the natural rapidity. Pulse 84, regular, a little feeble; temperature nearly natural.

Pectoral mixture. Gum water— $\frac{1}{4}$  enema of flaxseed, with poppy capsules.

*8 $\frac{1}{2}$  P. M.* One dejection after the enema. No cramps; slept since the visit.  $2\frac{1}{4}$  rations of diluted broth.

*19th.* Entirely convalescent from the slight cholera: on auscultation, found a subcrepitant rhonchus on the left side, posteriorly in a spot where she suffers acute pain since last evening. No alteration in the sputa. Leeches to seat of pain. Solution of gum. Cataplasm to chest.

*23d.* The slight pain in her chest a few days since, was dissipated by the leeches. Constipation for three or four days. Appetite—face still a little bluish. Urine abundant and pale. Potion of violets edulcorated. Solution of gum, with syrup of poppies.  $2\frac{1}{4}$  rations of rice.

The patient was now in her usual state of health: this observation is reported as briefly as possible, to show the little influence cholera

has upon the progress of pulmonary phthisis, nor are patients with tubercles at all more exposed to the disease, and certainly not affected with greater severity than other individuals in perfect health.

CASE XVIII. Salle St. Charles, No. 6. Service of M. Louis. Marie Nanzon, æt. fifty-three, seller of confectionary, (pedler,) widow, living in the 12th arrondissement, Rue d'Arras. Entered April 18th, 11 A. M. Food during the winter consisted only of potatoes, legumes, and boiled rice, with a little meat once a week, even this simple food was occasionally wanting. Eight days before her entrance, she was taken with diarrhœa, which ceased after four days continuance; her appetite was diminished, but she was not obliged to cease her work, during the succeeding days the discharges were regular and quotidian, but her appetite and strength were still a little impaired. On the 17th, at 9 P. M. she was taken with a sensation of dizziness, severe diarrhœa, perhaps twenty discharges in the same number of hours, and violent colics in the umbilical region. Cramps in the legs, and in a slighter degree in the arms, occurred at the same time, and have constantly continued and augmented in severity since the beginning, (she has umbilical hernia for many years.) She also states, that her health has been deranged in the winter, during the fogs, suffering from alternate constipation and diarrhœa, besides she has had a severe cold for the last month, with partial extinction of the voice.

18th, 5½ P. M.—Face a little blue, with the expression of suffering; nose cold, rest of face cool; arms and forearms cool and livid; eyes hollow, and sight a little troubled. Hearing perfect; folds in the skin of the neck are slowly effaced. Cephalalgia. Pulse 124, very small and feeble. Respiration 34, rather high. Aphonia complete. Cramps very severe, causing contortions. Tongue cool, blue at the edges, yellow and coated at the centre. Intense thirst. No pain remaining near the umbilicus, but the oppression at the epigastrium, which existed since the beginning of her indisposition, continues. Since her entrance she has vomited several times a greenish matter at the bottom of which is a little mucus. Some dejections. Suppression of urine—¼ injection of flaxseed, with ʒj. laudanum. Iced lemonade. Frictions. Sinapisms.

19th, 8 A. M.—Eyes still hollow. Little lividity of the face, surface in general of *higher* temperature than in the normal state, colour of neck and arms as yesterday. Slept well as soon as the cramps had ceased after the repeated frictions. Sight better, but still a little obscure. Ringing in the right ear only. Continual

drowsiness existing from the 17th, but when dissipated, she speaks and moves with vivacity. Voice nearly natural. Cephalalgia. The cramps are less in the inferior extremities, but more severe in the hands, and still force cries from the patient; she suffers intense pain in the muscles of the right lumbar region. Pulse 100, small and feeble. Respiration still costal. Tongue coated, and white at the centre, a little red at the edges. Thirst, and desire for cool and sweet drinks; lemons are disagreeable to her when in health. Still a slight tenderness and feeling of soreness from the vomiting in the epigastric and umbilical regions, but not distinct pain. Vomited five or six times last evening a greenish, bitter liquid, and this morning some tisane which she had drunk. Nausea frequent. Alvine discharges dark green and liquid, almost incessant, and without the consciousness of the patient. Seltzer water with solution of syrup of gum.  $\frac{1}{4}$  injection with  $\mathfrak{D}$ ij. laudanum, every two hours. Continue frictions.

4 P. M. The blue colour of the arms was in part due to a dye in which she had plunged them, and is removed by washing. Temperature more elevated. Intellect more lively. Sight improved; no tinnitus aurium. Cephalalgia not increased. No cramps, but a little numbness in the fingers. Pulse 100, with no particular character. Respiration 16, regular, not costal. Tongue dry and yellowish-red at the centre, whitish at edges. Thirst less than this morning. Vomited frequently, but only after drinking; feeling no nausea at other times; a flocculent green matter lies at the bottom of the liquid vomited. No dejection since the last injection, which was given an hour ago. Oppression without pain at the epigastrium. Venesection,  $\mathfrak{Z}$ vij.; cataplasm to epigastrium; Seltzer water; discontinue injections.

20th, 7 A. M.—Expression of countenance more animated and natural than yesterday; felt better and less oppressed after the bleeding; slept tranquilly, but felt frequent flushes of heat; vomited twice before and after drinking, a greenish, bitter matter; two dejections, not copious; urine natural frequency; abdomen indolent; feeling of tension at the hypogastric region, which is less yielding to pressure; pulse 88, tolerably full; tongue whitish, moist, and very warm; folds of the skin of the neck slowly effaced; a little cephalalgia. Seltzer water with solution of syrup of gum; antispasmodic potion, with  $\mathfrak{Z}$ j. syr. papav. alb.; two  $\frac{1}{4}$  injections of flaxseed; two rations of diluted broth.

4 P. M. Heat elevated; expression of animation in countenance; feeling of weight in the head; drowsiness frequent; pulse 88, full and

regular; tongue brownish and dry at the centre, moist in other parts; thirst less; from time to time cramps in the hands; borborygmi, but no dejections; urine. Twelve leeches to neck; injection of flaxseed; discontinue potion.

21st, 7½ A. M.—Amelioration immediately after the application of the leeches; still a little frontal cephalalgia; no nausea, vomiting, nor dejections; intellect and senses perfect; borborygmi; urine scanty; copious perspiration; appetite and thirst natural. Seltzer water, sol. syr. gummi; two and a half portions of rice; two rations broth.

4 P. M. Feels better; countenance good; a little heaviness of the head; heat of skin a little elevated; a very slight sensation of cramp in the fingers; tongue nearly clean; no nausea nor dejections. Continue prescriptions.

22d. Improvement continues. Note not taken.

23d. Intellect perfect; tongue moist, but still a little yellow at the centre; appetite; one liquid discharge since yesterday; urine abundant; but the patient says more coloured than in health; pulse 84, character of it natural; no perspiration; some hiccough. Sol. syr. gum.; injection of flaxseed; two and a half rations soup.

24th. No cephalalgia; appetite; feels better; a little perspiration upon the chest; tongue moist; pulse 80. Sol. syr. gum.; enema of flaxseed; three rations soup.

25th. Convalescent. Three rations soup; an egg; a cup of milk; and a little bread. Recovery complete.

CASE XIX. *Hopital St. Louis. Recovery by application of blister to the spine.* Method of M. GERDY.—Adile Duquesnay, aged twenty-four years, of a nervous temperament, and of a constitution moderately robust, consulted M. BERGEON at the *Hôpital Salpêtrière* April 14th, respecting a diarrhœa which had affected her for three days; but which was not accompanied with fever or colic, and which had not prevented her from attending to her usual occupations. M. B. advised rest in bed, diet, some simple mucilaginous drinks, immediately after returning to her lodgings, the diarrhœa became remarkably intense, accompanied by head-ache, a general trembling of the limbs, and an extraordinary feebleness; soon after, nausea was manifested, and the patient was seized with violent cramps. Thirty hours after this invasion of cholera, the following appearances were observed. Face pale; the features decomposed; countenance much changed; the nostrils contracted; eyes sunken in the orbit; encircled by a blue line; the surface of the abdomen and thorax cool; the extremities cold; pulse small and frequent, (95 to 100 per minute,)

cramps frequent and extremely violent, tongue pale, moist, but slightly violet in colour, as if the patient had drunk some red wine; thirst intense; nausea constant, but no vomiting; dejections resemble water in which rice has been boiled, and which contains portions of the flocculent grains; pain at epigastrium; feeling of apprehension over the chest; voice very feeble; respiration short and frequent; urinary secretion entirely arrested. In conveying the patient from the chamber to a carriage, syncope occurred three times; upon her arrival at the *Hopital St. Louis*, M. Bergeon applied two large blisters on the vertebral column; one between the shoulders, the other to the small of the back, an infusion of melisse was given for drink, and a portion with syrup of ether and half grain of opium; sinapisms were applied to the feet. The night was very disturbed, but the menses were manifested very abundantly, and the next morning the nausea had ceased, the cramps were a little less violent, and the diarrhœa less intense.

The second day after the entrance into the hospital, the diarrhœa scarcely existed; the cramps almost entirely dissipated; the heat of surface entirely reëstablished; the pulse strong; the voice recovered; and desire for food. On the third day, no cramps; no diarrhœa; scarcely any fever; voice sonorous; but there still exists great weakness; but the patient was resolved upon quitting the hospital, and that privilege was granted the next day. She has been visited since, and the convalescence is entirely established.

CASE XX. *Hospital Neckar. Salle St. Susanne. Service of M. Bricheteau.* Duval, a seamstress, aged forty-one years; tolerably robust. Taken ill on the 13th April, and entered the hospital the same day. She has had diarrhœa for the last six or seven days, the discharges becoming more frequent and thinner each day. This morning about 5 o'clock, she was affected at the same time with vomiting, and abundant stools, then with cramps, beginning in the toes, and afterwards extending up the legs. Pains in the epigastrium, with the sensation of twisting for six days; and colics during the last two. No tenesmus; no chills; dizziness since yesterday, and ringing in the ears, which prevent her from hearing, whether she speaks in a loud or low tone. No urine since this morning.

*April 13th, 11 A. M.*—Face cold, contracted, blue especially around the mouth. Eyes hollow and encircled, pupils natural; extremities cold and livid. Voice feeble, hoarse and changed. A little cephalalgia. Pulse very feeble, 100. Tongue rather cool and whitish. Epigastrium scarcely tender; pain of the right side in the region of

the liver. She has diarrhœa, vomiting and thirst; prefers hot drinks.

Frictions, hot bottles to the feet. Hot chamomile tea. Potion of peppermint, alcohol and sulphuric ether every two hours. Injection of twelve drops of laudanum.

7 P. M. Face a little red, the pulse has risen, hands and feet warm, abdomen tender, no dejection since the enema; vomiting and cramps from time to time, but less. No urine.

14th, 8 A. M.—Sensation of heaviness in the head. Eyes slightly injected. Pulse eighty-five, strong. No cramps since last evening. Thirst less. No urine.

15th, 8 A. M.—Diarrhœa much less. No vomiting since the evening. No cramps. Urine suppressed. Some dizziness and disposition to sleep. Epigastrium not tender. Pulse 70, less excited. Tongue a little red, moist, covered with a mucous coating. Thirst diminished, but still considerable. No pain in the abdomen.

Infusion of chamomile. Infus. orange flowers. Injection of twelve drops laudanum. Anti-emetic potion.

Infusions of chamomile, and of orange flowers. Enema, gtt. xij. laudanum.

April 16th.—Slept well. No vomiting. The cramps which returned yesterday, yielded entirely to frictions. Return of diarrhœa at six this morning. Stools not attended with pain. Urinated last evening. Thirst increased. Tinnitus aurium yesterday, none this morning. The menses, which were arrested at the beginning of the disease returned last evening. Pulse good. Skin natural. A little appetite. Whitish coat of the tongue is diminished. Epigastrium still a little sensible. Some pain at the extremity of the last rib on the right side.

Infusion of chamomile with nitre. Potion of gum with nitre. Enema of laudanum gtt. xij.

17th. Morning.—Vomited this morning a greenish matter, the diarrhœa continues. Abdomen not more painful. Menses continue, but in small quantity.

7 P. M. About ten this morning, she discharged a yellow matter without pain, the diarrhœa has ceased since that time. She feels better. Urine copious. No pain. A little feeble. Appetite tolerably good. Face and voice nearly natural, as well as the tongue and skin. No cramps since the day before yesterday. Took to-day a potion of sulphuric ether, and orange flower water, much relieved by it. But still thirst.

Soup and gruel.

No. XX.—August, 1832.

18th. Slept well. No pain, vomiting, cramps, nor dejections. Urine abundant. Pulse a little excited. Skin warm.

Lemonade. Broth.

19th. Improving. Lemonade and broth.

20th. Same condition, except slight rheumatic pains in the sides.

Lemonade.  $\frac{1}{2}$  of ration of food.

22d. Discharged well.

Case furnished by our friend Dr. SMITH, of North Carolina.

CASE XXI. Hopital Neckar, Salle St. Louis. No. 19.—Madame Coquet, marchande du quatre saisons, of middle stature and embonpoint, robust, enjoys commonly good health, aged twenty-six years; has been married seven years, had three children and one abortion, viz. of her second pregnancy, is now four months gone in her fifth pregnancy. Entered the hospital the 10th April, about 3 o'clock, P. M. She has undergone great fatigue and slept little for some days past, on account of the sickness of her daughter. Fatigue excepted, was in good health yesterday; ate for supper some boiled meat and sallad; during the night slight general indisposition; ate this morning without much appetite a little meat soup.

About 10 A. M. without previous pain or symptom, except the slight general indisposition, she was seized at the same moment with violent vomitings and purging without colics; she became cold; cramps supervened in the course of two or three hours, occupying successively the feet, calves of the legs, thighs, hands and arms. On entering the hospital about 3 P. M. she presents the following state. Face shrunk, icy, almost black, triangular. Eyes hollow, sunk, surrounded with a deep, livid circle. Tongue cold, moist, livid, with a whitish fur. Voice almost extinct; she whispers, or on exertion her voice is raucous. Speaking fatigues her much. Extremities cold, numb, and livid or marbled. Pulse imperceptible. Suppression of urine. Thirst is torturing; she likes indifferently cold or warm beverage. Cramps, vomiting and purging with short intervals. No pain from the purging. She lies on her back and dislikes to be disturbed. Bottle of warm water to feet, frictions of the limbs, sinapisms to the calves of the legs, a current of warm air by means of a portable chimney, was conveyed under the bed-clothes, and every two, three, or four hours a desert-spoonful of the following potion. R. Syrup cort. aurant.  $\bar{\text{z}}$ i.; vin. Malaga,  $\bar{\text{z}}$ i.; aq. Menth.  $\bar{\text{z}}$ i.; aq. Tiliæ europæa,  $\bar{\text{z}}$ i.; ether sulfuric,  $\mathfrak{z}$ j.; laud. (Rosseau,)  $\mathfrak{z}$ j.—M.



*April 11.* She presents to-day the same state, except that the symptoms are less urgent. She took to-day thirty-six grains of ipecac. without any apparent effect. For beverage to-day, lemonade; potion every four or five hours.

*April 12.* The same symptoms are present as before, but less urgent; temperature nearly natural. Infusion of chamomile. Potion.

*April 13.* This morning slightly comatose, much disposed to sleep. Eyes injected. Vomiting and purging continue, but are less urgent. Six leeches were applied behind each ear, which have abated the coma in a considerable measure. Pulse is perceptible, very weak. No cramps to-day. General weakness very great. Respiration a little constrained. Prescription of the morning, leeches, sinapisms to calves of the legs, tisan. Potion.

*April 14.* Comatose, face red, eyes very injected, light-headed during the night, pulse feeble, surface warm; purging and vomiting much diminished; blister to the calf of one leg, a bladder of ice to the head, thirty-six grains of ipecac. at two doses. I confess I could not see any other indication than that ipecac. has been ridiculously vaunted as a specific. However, the ice relieved her head notably, it was continued two hours. The stomach was in the same state after throwing off the ipecac. as before. She aborted—a dead child about 5 P. M. Potion, tisan.

*April 15.* Slightly disposed to sleep. Face rather red. Pulse active—eighty-five. Urinated a considerable quantity this morning for the first time since the commencement of the disease. Vomited this morning a yellow viscid matter. Tongue red and dry. Thirst much less urgent. Purging is very slight. Tisan of Tilleul with orange flower water. Potion two times in the twenty-four hours.

*April 16.* Vomiting and diarrhoea ceased. One passage since yesterday morning. No cramps. Urinates freely. Tongue moist, clean. Pulse pretty good. Surface of the natural temperature. Intellect clear. Tisan with chamomile and orange-leaves water; enema with ten drops of Rousseau's laudanum.

*April 17.* Four stools since yesterday, with efforts to vomit. Pulse a little excited. Slept pretty well. Urinates freely. No cramps. Gradually improving. Gum Arabic; enema with ten drops of Rousseau's laudanum.

*April 18.* Somewhat disposed to sleep. Ineffectual efforts to vomit. Epigastrium not sensible. Pulse a little excited. Tongue red, smooth, moist, a little swollen. Eyes slightly injected. One stool since yesterday. Bled a little at the nose from efforts in coughing. Gum Arabic.

*April 19.* Slept well. Tongue slightly red, moist. Eyes no longer injected. Face less flushed. Vomited and purged a great quantity of bile. Pulse good, a little appetite. Tisan of Tilleul and of orange leaves; enema with laudanum and rhatany.

*April 20.* General state favourable. Same tisan—one soup.

*April 21.* Complains only of a slight cough and general weakness. No pain. Tisan of Tilleul and one-quarter ration of food.

*April 22 and 23.* Same state—same prescriptions.

*April 24.*—To-day about 8 A. M. and again at noon, she had fits of violent shaking, about an hour each. She took nothing, and felt as usual after they were past. Prescription of the morning, Tilleul, gum Arabic, one-eighth ration of food.

*April 25.*—She slept well. About 9 A. M. a slight shivering, which was followed by head-ache and fever. She urinates, and has her passages now in the usual manner. Same prescription.

About 7 P. M. after an icy sensation of a moment's duration, occupying the whole body, she shook violently without pain. This shaking was cut short immediately by the application of ligatures to the arm and thigh, so as to arrest completely the circulation in the limbs.

*April 26.* Slept but little, but suffered no pain. Is gradually improving on the whole. Inf. chamomile; gum Arabic; soup, one-eighth ration of food.

*April 27, 28, 29, 30.*—Continues to improve. All the functions are gradually resuming their state of health. No shaking since the application of the ligature.

*May 1.*—Discharged cured.

The external means for keeping up the heat were employed till the reaction was fully developed. This took place very slowly, and was not complete before the 14th of April. The intervals between the times of taking the potion were gradually increased. The potion was entirely discontinued the 16th of April. The reëpearance of urine was coincident with a noticeable improvement, particularly in the circulation. The pulse before small and very feeble, became free and full. During the reaction, after it was fully developed, even to decided convalescence, little more was necessary to be done than to moderate the determination of blood to the head, once by leeches, the second time by ice, and derivatives to the legs. The relief afforded by the ice to the head was more decided than by the leeches; and also to check the diarrhœa by opiate injections. After the abortion, the lochial discharge in moderate quantity continued till her complete restoration to health. How far this discharge, operating as a derivative, contributed to her recovery, would afford mat-

ter of study, had we other facts of the same kind in sufficient number. I can discover nothing like periods in her disease; reâction came on very slowly, which very gradually changed into convalescence without any crisis. She had a slight cough for three or four days during convalescence. The ipecacuanha seemed to produce no effect whatever. She was doubtless much indebted for her recovery to the extremely vigorous constitution which she possessed. It is the most severe case I have seen followed by a recovery.

Communicated by ASHBEL SMITH, M. D. of Salisbury, North Carolina.

**CASE XXII.** Hôtel-Dieu, treated by M. MAGENDIE.—Lemoine, forty-six years of age, lace-maker, living in Rue des Lavandiers, No. 3, came into the Salle St. Monique, at Hôtel-Dieu, on the 5th of April. She says she has had frequent and liquid stools for four days. These stools were not preceded by colics. The day after the first appearance of them, (the third day before the entrance of the patient into the hospital,) she vomited. The vomiting continued all day, and at night she was taken with cramps in the legs. She remained in this state until the 5th of April, without taking any thing to relieve the vomiting or diarrhœa except some brandy.

On the 5th of April, when the patient entered the hospital, the following symptoms were observed. Skin generally cold; face and extremities of a bluish colour and extremely cold; cramps in the legs; pulse insensible; even the pulsations of brachial artery were not sensible to the touch; the voice was like that of a young child; there was great pain in umbilical region; continued vomiting of a greenish fluid matter, and diarrhœa which resembled urine. The patient has not urinated since yesterday.

M. Magendie ordered the following treatment.

The patient is to be put in a warm bed and to be rubbed with equal parts of ammonia and spirit of camphor. Immediately after the frictions the patient is to be surrounded with sacks of hot sand, and to drink as often as possible of hot punch made with tea four pints; four lemons; alcool, 1 pint; sugar, 1 pound.

*April 6th.*—The skin is warmer than it was yesterday. The diarrhœa has ceased. The vomiting still continues. The pulse is sensible but feeble. The extremities are still of a bluish colour, but not so cold as they were yesterday. The cramps in the legs have ceased. The patient has not yet urinated.

M. Magendie ordered hot wine to be given in the place of punch,

because the patient does not like this latter drink. The frictions and sacks of hot sand are to be discontinued.

*April 7th.*—The patient has urinated to-day for the first time since her entrance into the hospital. The other symptoms are the same as they were yesterday. The same prescription (hot wine,) to be continued.

*April 8th.*—The vomiting has ceased. The skin is of its natural warmth. The pulse is natural. No vomiting nor diarrhœa. The urine is natural. M. Magendie pronounced the patient convalescent, and ordered her chamomile tea and soup twice a day.

*April 9th.*—The patient is in the same state as she was on the 8th. Prescription, morning and evening.

*April 10th.*—The patient is able to get up and walk about the ward. Her drink is changed for wine and water. A mutton chop is added to her chamomile tea, soup.

*April 11th.*—She is in the same state. Prescription the same.

On the 12th of April, the patient left the hospital, and on the 24th of April, I visited her at her lodgings and found her in good health. She says since she left the hospital she has been as well as she was before she was taken with the cholera.

Communicated by THOMAS L. OGIER, M. D. of South Carolina.

CASE XXIII. Treatment of M. Rostan. Ferdinand Mendilly, (Italian,) æt. twenty-four, cage-maker, living Rue Auvall 8th arrondissement. His habits are temperate, alimentation sufficiently good; his lodgings well-aired and comfortable, his general health good.

Without having committed any excess, Mendilly was attacked on the morning of April 16th, by slight colics, but not feeling otherwise indisposed did not discontinue his usual work. On the morning of the 17th, the colics became much more violent, accompanied by copious alvine discharges, which at first had some consistence, and were of a yellow-green colour. These were repeated at least twenty times during the morning; each succeeding dejection becoming more and more liquid and less coloured, until, (according to the patient,) they were exactly similar to a weak decoction of rice, in which are a number of flocculi. Violent cramps came on soon after the increase of the diarrhœa, and were excruciating in the upper and lower extremities. The patient was admitted into the temporary hospital, of the "Grenier d'Abondance" at 1 P. M. the 17th. On the morning of the 18th, he presented the following symptoms. Tongue rather dry, rose-coloured on the borders, white in the centre, without any

mucous coating; thirst intense. Vomiting in the night after he had drank an aromatic infusion. Pain of the chest, and of the left lumbar region; colics less intense than yesterday; oppression very great; voice extinct; pulse small, frequent, but easily counted, 98 per minute. The cramps, which yesterday were so violent, have diminished in intensity since the patient has been placed in a hot bath of 104° Fahr. where he remained three-fourths of an hour. He has had some sleep during the night, but it was often interrupted and agitated. The eyes are deeply excavated, and sunken in the orbits, the conjunctiva is injected; the face of a deep leaden colour and cold, nose cold, the hands and feet lightly violet, and partake of the general coldness of the body, but are warmer than on the preceding evening. The urinary secretion entirely suspended. Through the day the patient has taken every hour a tea-spoonful of the following potion. R. infusion of tilleul, (lime-tree)  $\mathfrak{z}$ iv.; strychnine, gr.j.; syrup of orange flowers,  $\mathfrak{z}$ ij.; syrup simp.  $\mathfrak{z}$ iss.—M.

The warm bath was readministered on the 19th; the drink of the patient was an infusion of tea with sugar; an injection of mucilage of gum arabic,  $\mathfrak{z}$ j. with fifteen drops of laudanum was administered. Under the influence of this treatment, the favourable change manifested on the 18th, was much increased on the 19th. The cramps and diarrhœa ceased, the pulse regained its force; the oppression was dissipated; the eyes are more natural; the violet colour diminished, and the patient had a calm and refreshing sleep.

On the 20th of April, appetite returned, but absolute diet was still enjoined. The urinary secretion was in part reestablished.

21st. Countenance, expression, and colour natural; secretions reestablished; no remains of the disease other than feebleness; he was allowed light broths. On the 22d, food increased, patient in entire convalescence.

*Symptoms.*—In all, or nearly all the cases we have observed, diarrhœa commenced before the other symptoms; sometimes, but rarely, it was preceded or accompanied by chills; generally it began suddenly without premonitory signs other than flatulence and borborygmi. These symptoms cannot be regarded as peculiar to cholera, or as forming a part of the disease, since the majority of the inhabitants of Paris probably suffered from this modification of the epidemic influence. The diarrhœa was usually at first moderate, from two to ten liquid stools in twenty-four hours, but when the disease assumed a graver form, the dejections suddenly became extremely frequent, and

sometimes were almost incessant, with severe colics, which were relieved for a moment after each discharge. The colour of the dejections was various, but generally, at first, green or yellowish. The disease was regarded as commenced as soon as this exacerbation of the diarrhœa took place, and now speedily assumed its characteristic symptoms. The head-ache, vertigo, anorexia, and slight uneasiness which accompanied the commencing diarrhœa, were replaced by intense thirst, uneasiness at the epigastrium, vomiting and cramps; these symptoms closely followed the aggravated diarrhœa. The dejections are now composed of whitish albuminous matter, with parcels of mucus interspersed, like boiled rice, but sometimes the greenish or yellow colour is unchanged, at other times the stools are of a deep chocolate colour. The matter vomited consists at first of the ordinary ingesta, subsequently of bile followed by a whitish liquid like that of the dejections, and intermixed with mucus, or else white and glairy; at the beginning of the disease we often observed this last-described liquid thrown up nearly without effort, and sometimes almost streaming from the mouths of the patients. The abdomen is sometimes free from any pain; more frequently there are colicky pains of the intestines and a deep-seated constriction at the epigastrium, which the patients compare to the feeling produced by strong pressure; the pain at the epigastrium is not always increased by compression, and in some instances is even relieved. Cramps occur simultaneously with the vomiting or soon after it; they commence in the calves of the legs and feet, then extend upwards along the thighs, and are sometimes felt in the abdomen and along the spine. The upper extremities are nearly as often affected with cramps as the lower, but at a later period and in a less violent degree; in a woman at the Hôtel-Dieu we observed a strong trismus of the jaw, and generally the contraction of the muscular fibres during the cramps may be distinctly seen beneath the skin. The intellectual faculties are perfect, but a little duller than in health. The senses are frequently affected, but generally only for a short period. The voice is enfeebled, disguised, or nearly lost. The countenance expresses great anxiety; the eyes are much sunken and the cheeks depressed; the face, extremities, and frequently the chest are of a blue or violet colour; in the face this colour is especially marked around the eyes and in the lips. Sometimes this colour is so deep that it approaches a black, but only in cases of extraordinary severity. The surface is cold, especially the nose, the skin upon the prominences of the cheek, the hands and feet, but the patient most frequently is ignorant of their coldness, or even fancies that they are unnaturally warm; at other times, but rarely, he expe-

riences the sensation of cold. The skin of the extremities is singularly wrinkled, resembling the hands of a washerwoman, but thrown into more longitudinal wrinkles; if folds be made in the skin of the neck or other parts which are not very tense, by pressing it between the fingers, they remain a long time without disappearing. The whole surface resembles that of a dead body, but with this remarkable difference, that the temperature during life seemed much cooler to the hand than some hours after death; we had frequent occasion to verify this fact at La Pitié. The pulse at the commencement of the disease is scarcely affected, but with the progress of the cold stage sinks, and in severe cases ceases entirely in the radial artery; the pulsations of the heart require the application of the ear with great attention to be counted. This torpor of the circulation was like the other symptoms just mentioned, most frequently observed at the beginning of the epidemic, and often continued after the heat had returned to the extremities. The respiration is very costal, and usually, although not always, frequent, and almost invariably attended with great oppression, which forces the patient to change his posture frequently and lie with the hands out of bed. The urine is much diminished, or more frequently totally suppressed as soon as the grave symptoms appear, before the cold stage is completely formed, and does not return until the amelioration of the general symptoms, even if the diarrhœa and vomiting should cease. These symptoms of the second or cold stage do not necessarily all exist, nor is the order of their succession, although regular, rigorously established; but in tracing a picture of the fully developed form, it is easy to imagine the less perfect or milder types. Before death, the vomiting, cramps, and diarrhœa sometimes all cease; the patient falls into a state of partial stupor from which he is easily roused; the lividity and coldness augments, he generally lies on his back, the head thrown backwards, and eyes nearly closed and covered with mucus; stertorous breathing and sometimes cold perspirations precede the moment of death.

When reaction comes on, the warmth is restored to the extremities, but the more forcible action of the heart should be regarded as a much better evidence of the safety of the patient than merely the condition of the cutaneous surface. The voice becomes stronger, the vomiting and diarrhœa either cease or are greatly diminished; the cramps are less intense, but do not entirely subside as soon as the other symptoms; the urine becomes copious and natural. This period is scarcely less dangerous than the second or cold stage, and if the greater number of victims perish during the period of prostration at



the commencement of the epidemic, the consecutive diseases are more destructive when the disease bursts forth with less violence. Congestions of the brain, as indicated by the flushed face, stertorous respiration at times, and stupor should be carefully observed; nor is the unusual brightness of the eye and sudden vivacity of intellect to be regarded with much less apprehension. The cadaveric lesions of the brain in cholera are as little constant as in other diseases, but the changes observed after death were still sufficient to confirm the obvious symptomatic derangement. Pneumonia occurred frequently, not only in the cases upon which our analysis is based, but in a still larger number of mild choleras, it was detected and arrested by an appropriate treatment; the diagnosis must be based rather upon the appearance of the sputa and the examination of the physical signs, than the state of the pulse or respiration. The digestive organs offer symptoms of a new character; the tongue is coated, warm, red at the edges, the epigastrium and abdomen painful upon pressure, and the seat of a more constant, severe pain, than that produced by the colics. The intestinal canal becomes the seat of an unequivocal inflammation, the more severe from the great functional disturbance it had suffered, a cause of disease which is added to the disorder of the circulation and extreme feebleness that favour the inflammatory action in the whole system. If these symptoms are mild, the convalescence is prompt; patients who had been extremely prostrated, in a few days recovered their usual health; if the secondary inflammations are violent, the convalescence is longer and liable to interruptions or even relapses; but in no case should we forget the extreme danger of the disease, or allow a patient to return to his usual habits, until strength be perfectly reëstablished; not a few of those discharged as cured from the hospitals of Paris, were really perishing from a return of the cholera, or from one of its attendant diseases.

*Treatment.*—The subject which we approach with the greatest reluctance, from the extreme difficulty which it offers, is that of the treatment; this difficulty depends upon the little power which our remedial agents possess of opposing this disease, and still more the necessity of constantly varying the means employed, and the degree of activity in their use, according to the diversified stages which cholera presents. In the diarrhœa, which may either be a precursor of cholera, or merely a slighter action of the morbid cause, the treatment should only differ in energy from that employed in ordinary seasons against a similar affection. In the mildest form there is no nausea or ex-

citement of the pulse, or pain in the abdomen; the only inconvenience experienced is the borborygmi and the liquid discharges; here the abstinence from food should be immediate, or the diet limited to light broths; this diet alone, or with a moderate dose of opium, will generally arrest the symptoms. The same diarrhœa assuming a severe form, has received the appellation of cholérine at Paris; the dejections are more frequent, and often attended with pain; the pulse usually a little excited, with general feeling of uneasiness or vertigo. The diet should be as rigid as in the last mentioned instance, but the febrile excitement should be reduced by bleeding, and leeches if any local pain exist; to these depletory means a warm bath may be added, provided a bath can be placed close to the bedside of the patient, and be given without the slightest , the bath is usually followed by profuse perspiration, and with salutary effects, as the authors can attest from their personal experience. Should the discharges be still abundant, they should be checked with opium, and if the mercurials possess any efficacy in changing the course of cholera, theoretically we should advise their administration at this point, practically we know nothing of their action in this epidemic. External stimulants, as sinapisms, must be used at the discretion of the practitioner, the ordinary rules for their application directing his prescriptions. The symptoms combated by these means do not yet constitute the cholera, they are but the prodromus, but the most useful and interesting moment for the practitioner is that of anticipation and prevention rather than cure. After the diarrhœa has continued for some time, the commencement of the formed cholera is announced by the vomiting and cramps, which are not at first attended by the alteration of the voice, or the blueness and coldness of surface. The symptoms are now the most urgent, and require the most vigorous treatment, blood-letting is advisable if the pulse be not much depressed, and should be carried as far as the strength of the patient permit it, the effect of it in the cases with which we are familiar was happy; unfortunately our number is necessarily limited, for the patient in hospitals are rarely seen at the most favourable moment for treatment. Use should be made of the *hot*, (not the warm,) bath, at 104° Fahr. as practised by M. Rostan, and external stimulants; should no pain at the epigastrium exist, other than the colics, which are diminished by pressure, an emetic of ipecacuanha may be administered with great advantage. M. Andral was much pleased with its administration at La Pitié, and we know that during the existence of the cholera at Vienna, the treatment by ipeca-

cuanha was regarded as the most effectual. It may generally be given without fear for the most careful examinations have proved that the inflammatory appearance of the stomach was more frequently found at the termination than during the most violent period of the disease, and at the beginning, our object is to change by a sudden impression the derangement not of one but of the whole systems of organs. The cramps are most readily relieved by smart frictions, which are more effectual than compression by tourniquets as tried at one of the hospitals; the frictions should be kept up with perseverance until the patient is relieved. Should the blue cold stage come on in spite of the most vigorous treatment, we must not think of pursuing further the depletion; it was imagined that the profound prostration was due to the congestion of the internal organs which impeded the action of the whole machine, but the attempts at blood-letting, which could only be performed with the aid of hot applications to the arms, caused a temporary flutter of the pulse, followed by a more rapid extinction of life. The treatment is the most simple possible, for it is not with the intention of curing the disease itself, but of preserving life, that we must stimulate; frictions with warm liniments should be almost incessant, and made from the extremities towards the central organs; sinapisms to the extremities; and particularly a liniment of ammonia and turpentine, which is applied along the spine by flannels impregnated with it, a hot smoothing-iron is then to be passed rapidly along its whole length. This application was employed by M. Petit of the Hôtel-Dieu, and with great advantage. Dry heat is preferable to moist, hence resort is had to sand-bags, hot cloths, or still better, to the introduction of heated air beneath the bed-clothes by a tube communicating with a small furnace.

The question of internal stimulants has been much discussed, we regard them as improper in themselves, but sometimes their employment becomes necessary, but only for the immediate necessity of preserving life, and as soon as a moderate degree of reaction is produced, they should be discontinued. The diarrhœa in the cold stage, and that immediately preceding it, should be combated by opiate injections, alone, or with a preparation of rhatania; but if these injections succeed in their effect and are not discharged, their influence if continued is injurious, and tends to aid in producing the internal congestions to which the patient is exposed by his extreme feebleness. The vomiting is best allayed by Seltzer water given simply, or with a mucilaginous syrup, or if not extremely disagreeable to the patient, ice in substance, or iced water in very small portions.

But little else can be done during the cold stage, which is not one in which the powers of medicine are very efficient; when fairly formed it is usually fatal, and the mortality of the most destructive period of the epidemic arose from the deep prostration of the individuals, who were struck with the full violence of the disease, almost without the precursors usually observed. Every variety of stimulant treatment was employed in vain, and those who witnessed the terrific aspect of the cholera at its first appearance, were not surprised to learn that of the first one hundred cases admitted into the Hôtel-Dieu, ninety-seven of which were cholera, ninety-six died, leaving but one solitary case of the disease cured. Yet this was not from the treatment of a solitary physician, but the results of the practice of all of the physicians and surgeons, who divided the patients in the ward. This bad success was not peculiar to the Hôtel-Dieu; at La Pitié, La Charité, Neckar, and even at the Val-de-Grace with healthy, robust soldiers, the results were about equally bad. The professor who has attracted so much attention, as the author of the physiological system, stated, that he had lost but about one in six patients in the most unfavourable period, unfortunately his own official reports proved the strange delusion, with which he flattered himself. The difficulty of deciding as to the merits of any treatment in cholera, is evident, from the unfavourable results at the beginning of most of the epidemics, but especially that at Paris, and the happy termination of most of the cases which have occurred within the last fortnight, (May 5th.) The period of reaction is one of great risk, at first nearly all the patients died during the cold stage, but after the epidemic had continued a certain time, a large number passed safely through this period, and perished during a fancied convalescence. The therapeutics must be based upon the strong tendency to local inflammations or congestions, which must be watched with the utmost care, as a slight lesion of an organ, will produce the most fatal effects upon the enfeebled victims of cholera. Opium should be discontinued or given moderately and *cautiously*, if the head becomes hot with cephalalgia, brightness of the eyes, ice should immediately be applied over the whole scalp, and blood be drawn especially by leeches. Should the respiration be a little impeded, the chest must be explored, and if a little crepitus exist in any part, leeches should be applied to it, if the patient's feebleness forbids venesection. The abdominal viscera should be carefully examined, for if the autopsies have taught us that the lesions observed in the cases which terminated with the greatest rapidity, were few and not constant, we have also seen that the most severe inflam-

mations very often occur in the intestinal canal; the abdomen should be carefully pressed, and even if no tenderness exist, should the thirst and heat of skin be great, local depletion and antiphlogistics are requisite, the small and large intestines are not exempt from these inflammations, and equally demand an analogous treatment. The physicians at Paris were desirous of testing the merits of many of the heroic remedies, but they quickly discovered that the violence of an epidemic, forms no exception to the general rules of treatment, and returned to a more rational employment of the ordinary means, rather than a fruitless search for boasted specifics.

In concluding our brief history of cholera, we may state that not only have the physicians of the three largest hospitals at Paris, declared their disbelief of the existence of contagion, but that from our own observation, the physicians and pupils who passed the greater part of the day in the wards and dissecting rooms, were at least as exempt from cholera as any other classes of the population. In our personal acquaintance, not an individual was attacked with severe disease. The facts observed at Paris, add only another proof to the absurdity of quarantine regulations, at least with respect to epidemics of this character. We need not insist upon the diagnosis of spasmodic cholera, the vomiting, purging, *suppression of urine and cramps*, will characterize it even before the complete formation of the cold stage. The prognosis is simple, but depends chiefly upon the violence of the blue stage, the age of the patient and the disposition to secondary congestions or inflammations; at the commencement of an epidemic it is generally unfavourable, towards the close, on the contrary, the cases are milder and the chance of recovery is nearly as great as in other severe diseases.

*Paris, May 5th, 1832.*